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Ed Brown

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DINSDALE SPA HOTEL.



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FACTS

RELATIVE TO THE

MEDICINAL PROPERTIES

OF THE

DINSDALE AND CROFT

SULPHUR SPRINGS.

BY

THOMAS DIXON WALKER,

SURGEON, HURWORTH.

THIRD EDITION, MUCH IMPROVED.

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THE DINSDALE AND CROFT INNS.

1835.



TO THE RIGHT HONOURABLE

THE EARL OF DURHAM.



MY LORD,

IN AVAILING MYSELF OF YOUR LORDSHIP'S PERMISSION, TO DEDICATE THE FOLLOWING PAGES TO YOUR LORDSHIP, ALLOW ME TO EXPRESS THE HOPE, THAT YOU MAY LONG BE SPARED TO ASSIST IN THE COUNCILS OF YOUR COUNTRY, TO BE A BLESSING TO YOUR FAMILY, AND AN ORNAMENT TO THAT RANK YOU SO JUSTLY HOLD.

I AM, MY LORD,

YOUR LORDSHIP'S MOST OBEDIENT

HUMBLE SERVANT,

THOMAS DIXON WALKER.

ERRATA.

Page 74, line 4, for DEC. 9th, read DEC. 7th.

155, --- 15, for COURSE, read COARSE.

INTRODUCTION.

IN the world's hale and undegenerate days, when man's lease of life endured for centuries, and was unencumbered with clauses prejudicial to the tenant, no mention is made of disease, and consequently not of remedies ; but long ere his tenure was abbreviated to three-score years and ten, the virtues of water, as a medicament to his maladies is fully recorded.

Providence has in every part of the world, abundantly supplied its inhabitants with this most necessary element, without which, neither animals, vegetables, nor minerals, could be supported, causing it to flow plentifully in springs from the bowels of the earth, sometimes in pure streams for the common support of living creatures, and at other times, welling up to the face of day, impregnated with principles of a medicinal nature.

All waters, properly speaking, except rain water, may be called mineral; as they undoubtedly derive, from the strata through which they pass, a degree of impregnation; but, in a medical sense, this term is limited to those waters, distinguished from common water, by some peculiar smell, taste, colour, or temperature, and which are found to produce some remarkable change on the human constitution.

Mineral waters have been divided into four classes; the sulphureous or hepatic, the chalybeate, the acidulous, and the saline. Of these, the sulphureous have always been held in the highest estimation, as being most efficacious in the removal of disease.

The **HEPATIC, or SULPHUREOUS WATERS**, are those which contain sulphuretted hydrogen gas, and are distinguished by the odour of sulphuretted hydrogen which they exhale, and by the property which they possess of blackening silver and lead. The nature of sulphureous waters long puzzled the chemist; for, although they frequently deposit sulphur spontaneously, yet no sulphur could be artificially separated from them. The secret was at last discovered by Bergman. These waters are of two kinds, in the one, the sulphuretted hydrogen gas is uncom-

bined; in the other, it is united to lime or an alkali. They are frequently also impregnated with carbonic acid, and usually contain some muriates or sulphates. In the Dinsdale Water, and also the New Well at Croft, the sulphuretted hydrogen is uncombined, and upon exposure to the air the sulphur is deposited. Upon collecting a quantity of the sediment from the cold bath at Dinsdale, and drying it, it burnt with a blue flame, and possessed the other characters of sulphur.

The **CHALYBEATE WATERS** contain a portion of Iron, and are distinguished by the property they possess of striking a black colour with the tincture of galls. The iron is usually held in solution by carbonic acid; in some instances it exists in the form of a sulphate, but such springs are rare. It very often happens that the carbonic acid is in excess; in which case the waters are not only chalybeate but acidulous. This is the case with the water of the old well at Croft.

The **ACIDULOUS** waters contain a considerable portion of carbonic acid gas. They are easily distinguished by their taste, and by their sparkling when poured into a glass. They contain in general some common salt, and a portion of the earthy carbonates.

SALINE WATERS, contain only salts in solution, without iron or carbonic acid in excess. They are distinguished into four orders. The waters belonging to the first order, contain salts whose base is lime, and generally either the carbonate or the sulphate. They are known by the name of hard waters, and have but a slight disagreeable taste. The waters belonging to the second order are those in which common salt predominates. They are recognized by their salt taste, and like sea water usually contain some magnesian and calcareous salts. The water of the third order contains sulphate of magnesia, they have a bitter taste, and are purgative. The waters of the fourth order are alkaline, containing carbonate of soda, and are distinguished by the property which they have of tinging vegetable blues, green.

In the earliest ages these springs attracted the attention of mankind, and were resorted to by the sick and employed medicinally, either externally or internally; thus Homer, the great poet of antiquity, in the 22 Iliad, commends one of the fountains of Scamander, for its hot waters;*

*“ Next by Scamanders double source they bound,
Where two fam'd fountains burst the parted ground;

and in our own country, the famous bath in Somersetshire, is said by some to have been in use 800 years before the christian era.

Ancient philosophers attempted to pry into their mysteries, and failing in the attempt, they gave that worship to the creature which was due to the Creator, and adored the water as a God; whilst kings and emperors in gratitude for their own restored health, vied with each other in erecting splendid baths, and magnificent hospitals in their immediate vicinity, in order that heaven's first, greatest, best of blessings, might be placed within the reach of their poorest subjects.

The great fathers of our art, men of profound observation and sound judgment, prescribed their use,—hesitated not to receive instruction from the hand of nature, and with the honest simplicity of the times in which they lived, freely and openly acknowledged the obligation. In the time of Hippocrates, we find that bathing in natural springs of warm water was recommended

This hot through scorching clefts is seen to rise,
 With exhalations streaming to the skies;
 That the green banks in summer's heat o'erflows,
 Like chrysal clear, and cold as winter snows."

POPE'S TRANS.

with a medicinal intention. In the fifth book of his *Epidemics*, he tells us of a person who was cured of an obstinate cutaneous disease, by bathing in a certain warm spring; and in his second book *de Diæta*, he says a great deal of their use in medicine. Plato recommends the use of mineral waters in several diseases of the body, as well as for their admirable faculty of restoring strength and vigour to bodies worn out by hard labour. Vitruvius has a whole chapter on warm and cold springs, wherein he describes their virtues when taken internally. He says that bituminous waters are of great service in many disorders of the body. Strabo, in his fifth book makes mention of several cold springs, which were serviceable when drank, as well as bathed in. Aretæus, prescribes the warm sulphureous baths in the cure of the Elephantiasis, and recommends their use in the cure of melancholy. Pliny notices the waters of Spa, and particularly mentions the chalybeate taste which they leave on the palate after drinking. “*Tungri civitas Galliæ fontem habet insignem plurimis bullis stellantem, ferruginei saporis, quod ipsum non nisi in fine potus intelligitur.*”* *Hist. Nat.*

*“There is a remarkable spring at Tungri in Gaul, which

Lib. xxxi, Cap. 2. He takes notice of many other mineral springs, in different quarters of the world, and bestows a great deal of pains in describing their virtues, as well when applied externally as when drank at the fountain. Scribonius Largus, who lived in the reign of the Emperor Claudius, recommends the use of water in which steel has been quenched in several diseases of the bladder; and says that *he learned this practice from observing the good effects of a certain chalybeate spring, famous for curing diseases of that description.*

Seneca, speaking of warm and cold medicated springs, has these remarkable words, "*Quædam enim oculos, quædam nervos juvant, quædam inveterata et desperata a medicis vitia percurant. Quædam medentur ulceribus, quædam interiora fovent potu, et pulmonis ac viscerum querelas levant. Quædam supprimunt sanguinem.*"* *Quest.*

sparkles greatly in consequence of the water boiling up in so many different places, and this has the taste of iron, which however no one can perceive until he has swallowed a certain portion."

*"Great is the efficacy of mineral waters, for some assist the sight, some strengthen the nerves, and others cure diseases the most inveterate, even those which have been despaired of and given up, as beyond cure, by physicians. Some heal ulcers, some by the patient's drinking of them,

Nat. Lib. iii, Cap. 1. Cælius Aurelianus, recommends the internal use of mineral waters, and gives us very distinct directions for their employment in many diseases. Galen, in many places takes notice of the admirable effects of warm bathing in the cure of diseases, as appears in his treatise, *de Temperamentis*. It is not quite clear whether Galen ever made use of medicated waters in any other manner than as a bath, though Le Clerc, from a very obscure passage is inclined to think he did. Atheneus, tells us of a fountain in Paphlagonia, which had an inebriating quality, to which many inhabitants of the country frequently resorted.

John Michael Savonarola, who was physician to the duke of Ferrara, and who died in 1431-32, was the first physician who wrote professedly on mineral waters; and Dr. William Turner, Dean of Wells, in king Edward VI time, (whom the severities of queen Mary's reign, forced upon voluntary banishment into Germany, where he studied physic, and after his return was physician to the duke of Somerset,) was the first Englishman who wrote on mineral waters. He pub-

are soothing to the inner parts of the body, and alleviate the complaints of the lungs and bowels; others keep down and cool the blood."

lished a treatise on the Bath waters, in 1560.

Henry the IV of France, frequented the sulphur springs of Bareges, in his youth; and Louis the XVI. dignified them with an hospital for his wounded officers, and another for his soldiers, who, when past all other means of cure, were from the remotest parts of France, sent to Barege as a last and sure resource. In the dark ages of superstition and ignorance, every medicinal spring was believed to be under the tutelary power of some spirit or guardian saint; and many ceremonies were performed, previous to drinking the water; for where the mind is uninformed fancy reigns supreme, the imagination is all-powerful, and commands a belief in the most inconsistent and absurd suppositions.

Many such wells, pools, and lakes, were scattered among our hills and vales, and to them, mostly on the first morning of May, the peasantry flocked far and near, for the sake of healing the sick, or the maimed, with a drink from the charmed water, as the day dawned. A short hymn or song, expressive of faith in the virtues of the spring, and of hope of health in the sick person, was first chaunted, and then the pilgrims knelt down, and lapped the water from their hands. It was unusual or subversive of the

charm, or the virtue of the water to drink it from a eup, unless the eup happened to be a blessed one, such as the pious of old always had in store for opulent pilgrims. When a cure was performed, and tradition says many were, the crutches of the lame, and a garment of the sick, were presented as an offering, and laid on the margin of the water, or suspended from the boughs of a neighbouring tree; and this too was generally accompanied by a religious chaunt. On the brink of many wells in Dumfriesshire and Galloway, ribbons and other little articles of female finery have been seen by people yet living, fastened so as to wave over the spring, the offerings of mothers for the recovery of their children; and several of the wells yet bear the name of the guardian saint; and stories of the cures they performed of old are still current in the country.

In fact, it appears that from the first syllable of recorded time, even to the present period, mineral waters, have ever been the last resource of the sick and the afflicted—and HE who has created nothing in vain—HE in whose hands is Health, has blessed their use to thousands when “vain was the help of man.”

About the end of the 17th century, an attempt was made to detect the ingredients of

which these waters were composed, or to discover the substances to which they owed their medicinal properties; since that period much has been done by the labours of chemists, and many important discoveries have been made, which have considerably improved our knowledge of mineral waters. But we must confess, that although many of these waters have been carefully examined by eminent chemists, and this branch of science has made great progress; we are very far from having all the certainty with regard to their contents that might be desired.

When we consider that almost all mineral waters hold several different substances in solution, which being united with water, may form with each other numberless compounds; that frequently some of their principles are in so small a quantity, that they can scarcely be detected; and yet may possess great influence on the virtues of the water, and also on the other substances contained in the water; that the chemical operations used in the analysis of the water, may sometimes occasion essential changes in the substances that are to be discovered;* and that

* Dr. Clanny, in his valuable Treatise on the Mineral Waters of Gilsland, published in 1816, observes, "An idea has long been impressed upon the mind of the writer, that

we cannot imitate them, so as to produce effects, exactly similar to theirs on the human constitution, the analysis becomes an arduous and a difficult task.

Labouring under all these difficulties it is to chemical agency that we are indebted for a more accurate knowledge of mineral waters, without which, their history would amount to a mere catalogue of names, and their use, an absolute system of mystical empiricism; chemistry being the handmaid to impartial experience, and enabling the physician to form a rational theory of their mode of operation. For instance, the waters of Sales, in Piedmont, were long esteemed for their efficacy in bronchocele and scrofula, and so far their effects were known and valued, but it was not until 1820, when Angelina discovered the presence of Iodine in their waters, that a satisfactory solution of their *modus operandi* was obtained. The saline springs of Ashby-de

the solid contents of mineral waters are in a different state of combination, when suspended in the water, from what they are found to be when disengaged from it by evaporation. This subject is ably treated, for the first time, by Dr. John Murray, in his *Analysis of the Mineral Waters of Dumblane*, inserted in the seventh volume of the *Transactions of the Royal Society of Edinburgh*."

la-Zouch, in England, and of Krewznach, in the Palatinate, have long had a high medicinal reputation, both of which have been recently discovered by Daubeny and Liebig, to contain an unusually large proportion of a very active principle, the hydrobromate of magnesia. If so great be the virtues of ingredients, with which we are acquainted, it is not unlikely, that similar or even more powerful principles may exist with which we are unacquainted. Well might our forefathers consider many mineral springs, as specifics prepared by the hand of nature for the cure of the more obstinate maladies, with which the human race is afflicted.

The numerous and fanciful theories, which have been raised as to the manner in which mineral waters act upon the human frame, in the removal of disease, have induced many professional men to doubt their efficacy altogether. In general the old writers on mineral waters, either from caprice, prejudice, or unworthy motives, made each particular spring in the neighbourhood of which they happened to reside, a specific for every disease to which the human frame is liable; and seem to have selected them rather as subjects of panegyric, than of impartial examination; and although this subject has long

engaged the attention of the physician and the philosopher, and many works containing much valuable information have been published upon Mineral Waters; yet unfortunately, from the manner in which that information has been conveyed to the public, mixed up with technical terms, and theoretical explanations, involved in metaphor and obscurity, they are in general rendered useless to the invalid, who is most interested in their perusal.

In fact nothing is more common than to write a treatise full of mystification, so that even the author would be puzzled to explain his own meaning, but so to write, that the censure of Lord Bacon may be avoided, wherein he chastiseth some such scribblers, is much more difficult. "We know" says he "we may have a natural history, large of bulk, pleasant for variety, and neatly contrived: but if any one should weed out the fables, quotations, needless controversies, and flourishes, which are more proper for table talk, and stories in a chimney corner, than for institution in philosophy, the matter would fall to nothing." This is far from the history I propose; and if I have ventured, in the course of this work, to make any remarks upon medicines, which in my hands have been successful in cur-

ing diseases hitherto considered almost, or altogether incurable; my only answer can be, that I have ever considered it the greatest praise of a medical practitioner, to seek out new remedies for those diseases which have baffled the old ones; and his first duty, if he has been so fortunate as to discover any, to give them freely to the public. This was the opinion of those honest ancient times, when the great father of the art having cured a desperate malady, hung up his votive tablet in the temple of Esculapius, and with his success, told the world the medicine.

In a dissertation upon any remedy, an author is naturally led into a partial praise of its efficacy; I have however, as far as lies in my power, presented to the reader in plain language, even at the risk of being thought vulgar, an impartial statement, founded upon facts which have come under my own observation during the last ten years; and in those diseases in which I have entertained any doubt as to the efficacy of the Dinsdale or Croft Waters as a remedy, I have candidly made it known; when that doubt has amounted to any thing like conviction, I have suppressed it altogether.

The cases embodied in the following treatise, have been selected from many others, not in con-

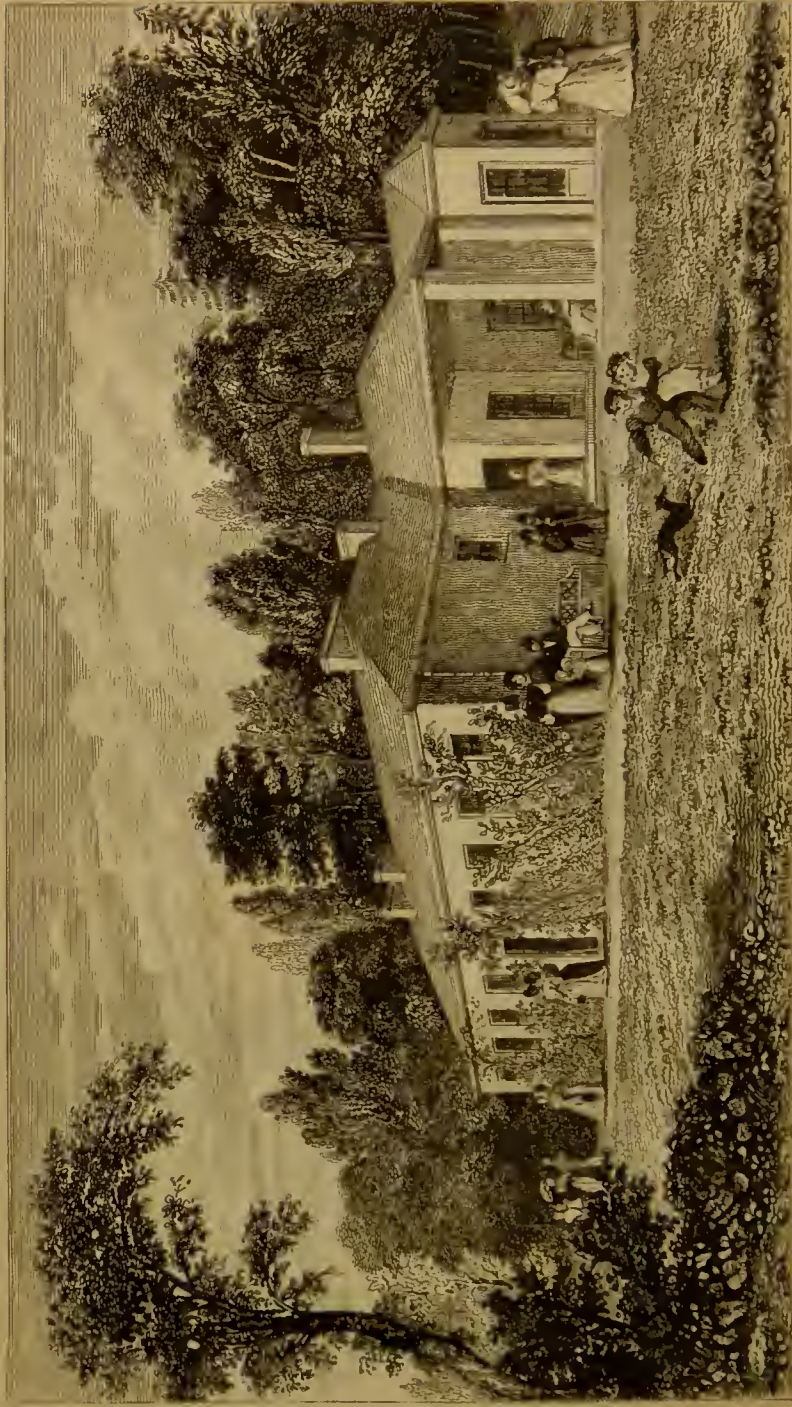
sequence of any particular circumstances attending them and rendering them remarkable; but in consequence of my knowing from the particular character of the individuals, that my instructions had been obeyed to the letter.

It is the object of the following pages to point out those diseases, in which the waters of Dinsdale and Croft may be used with the greatest advantage; the particular stage or form of the disease in which they are most useful; and the manner of using them.

With regard to the analyses, I believe they will be found correct; and, if I have succeeded in giving a faithful view of my subject, I shall consider myself amply rewarded.

Hurworth, October 15th, 1834.

BATHS, DINDSDALE SPA.



Drawn & engraved by W. J. L. L.

PRACTICAL OBSERVATIONS, &c.,
ON THE
DINSDALE SULPHUR WATER.

HISTORY AND SITUATION.

THE Dinsdale Spa is situated upon the north bank of the river Tees, about forty yards from the margin of that river. It was first discovered in the year 1789, by some workmen employed by the late Mr. Lambton, in searching for coal. The remarkable quality of the water attracting their attention, a hole was made in the ground, in the channel of the spring, for the purpose of bathing; and one of the workmen, who for many years had suffered from chronic rheumatism, was cured by drinking the water, and using the bath. From this period, until the year 1797, it was

much resorted to by the neighbouring villagers; when, in consequence of the many remarkable cures effected by it, a bath was built for the convenience of cold bathers. The number of visitors, attracted by its healing powers, annually increasing, the baths were re-built in 1824 upon a more extensive scale, and every convenience and comfort added, for the accommodation of the invalid.

The Spa is surrounded by a beautiful plantation, which to the westward extends nearly a mile along the margin of the river Tees, intersected with shaded walks; in which at intervals, seats are placed for the accommodation of the visitors.

Above the plantation, and immediately behind the Spa, stands the Dinsdale Hotel, the view from this point is gratifying beyond description. The eye wanders over the beautiful vale of Cleveland, an extensive and highly cultivated tract of country, which has not inappropriately been called the "Garden of Yorkshire," through which the river Tees winds and meanders until lost in the distance; a bold range of mountains, the Cleveland and Hambleton Hills furnishing a noble back ground to a luxuriant picture.

To the east of the Dinsdale Hotel, and about half a mile distant from the Baths, stands the

pleasant village of Middleton-one-Row, which about forty years ago contained only a few mud walled cottages, but which now boasts of its Hotel and a splendid row of lodging houses, where the accommodations are of a very superior description.

Dinsdale is five miles from the market town of Darlington, four miles from Croft, celebrated also for its mineral waters, and within eight miles of Stockton, and five of Yarm. The Darlington and Stockton railroad runs within a short distance of the Spa, and a Stage Coach from Newcastle to the Dinsdale Hotel, travels daily during the season, thus rendering the conveyance to and from the above places, pleasant and expeditious. The surrounding country is very beautiful, and abounds with every thing that is requisite for comfort and luxury.

ANALYSIS OF THE WATER.

The different bodies which are dissolved and combined in mineral waters, are detected by the addition of certain substances to the water, which is subjected to examination. The consequence of the addition is some change in the appearance

of the water, which indicates the presence or absence of the bodies suspected. The substances thus employed are distinguished by the name of *tests*, and are the instruments by means of which the analysis is accomplished.

The Dinsdale Water when first drawn from the spring is perfectly transparent. It has a very strong sulphureous smell, which may be compared to that of a damp rusty gun barrel. To the taste it is not unpleasant, and like the generality of hepatic waters, leaves a slight sense of sweetness upon the palate. It loses its transparency when exposed to the air, the sulphuretted hydrogen gas undergoing decomposition, the oxygen of the atmosphere uniting with the hydrogen, the sulphur is precipitated in a state of minute division.

The temperature of the water is 52° . The specific gravity 1.0054, distilled water being 1,0000.

ACTION OF TESTS.

1. Litmus paper was slightly reddened, but this tinge disappeared upon drying.
2. Lime-Water produced a copious white

precipitate, which was soluble with effervescence in Muriatic acid.

3. Nitrate of Lead, a copious black precipitate, with the boiled water a white precipitate is produced.

4. Muriate of Barytes, a copious white precipitate.

5. Nitrate of Barytes, was added to the water as long as any precipitate was produced; it was then filtered, and a solution of Nitrate of Silver dropped into the filtered water; a white precipitate was produced, insoluble in Nitric acid.

6. A portion of the water was saturated with an Alkali, and after filtration, Oxalic acid was added, which caused an immediate and copious white precipitate.

7. To a portion of the boiled and filtered water pure ammonia was added, which caused a light cloud.

8. Nitrate of Barytes was added to the water, so long as any precipitate was produced, the fluid was then filtered, and Lime-water added to the filtered water; a light cloud was produced.

9. Oxalate of Ammonia, a dense white precipitate.

10. Barytes water, a copious white precipitate insoluble in Nitric acid.

11. Subcarbonate of Soda, a white precipitate.

12. A solution of Carbonate of Ammonia was added in slight excess to the water, which rendered it milky, it was then filtered, and a solution of Phosphate of Soda added to the filtered liquor; an immediate white precipitate of a granular appearance was deposited upon the side and bottom of the glass.

13. Syrup of Violets, rendered the water of a beautiful green.

14. Paper stained with infusion of Brazil wood, was rendered darker, with a slight shade of blue.

From these effects, we may presume that the water contains muriatic and sulphuric acids, united to lime and magnesia, with a strong impregnation of sulphuretted hydrogen and carbonic acid gas.

EXAMINATION OF THE GASEOUS CONTENTS.

A. EIGHT ounces of the water were made to boil for fifteen minutes, in a glass flask luted to

a receiver, into which a solution of acetate of lead, with excess of acid had previously been introduced.

In this manner a quantity of sulphuret of lead was obtained, which, when washed and dried, weighed 2·375 grains.* This quantity may be stated as the representative of 1·25 cubic inches of sulphuretted hydrogen gas.

B. An equal portion of the water, as was employed in the last experiment, was treated in a similar manner, substituting for the acetate of lead in the receiver, a quantity of Lime-water; in this manner, 1·15 grains of carbonate of lime were deposited, representing ·575 of a cubic inch of carbonic acid gas.

C. The gaseous substances contained in eight ounces of the water were collected in a graduated jar, placed in a water bath. The jar, with its contents, was allowed to remain inverted for forty-eight hours; during which time, it was occasionally agitated, with a view to facilitate the absorption of such portion of the gaseous contents as might be soluble in water. There still remained

* The experiments for obtaining the quantity of the gases, were each performed three times, and the medium of the three taken as a standard.

·4 of a cubic inch of gas, the corrections for pressure and temperature being duly made; which water did not appear capable of absorbing, and which, when exposed to the action of a solution of iron impregnated with nitrous gas, did not undergo any diminution, and which possessed the characters of pure azote.

EXAMINATION OF THE SOLID CONTENTS.

A. SIXTEEN ounces of the water slowly evaporated, yielded 28 grains of solid residue, dried at the temperature of 212° .

B. This product was digested in alcohol for several days, and a solution of part of the saline contents obtained. This evaporated to dryness, gave a small quantity of solid matter, which by exposure to the air, deliquesced considerably, and became nearly all dissolved.

C. The deliquesced mass was dissolved in distilled water; and the solution decomposed at a boiling heat by the addition of subcarbonate of soda. The precipitate thus obtained, was treated by dilute sulphuric acid, and a quantity of sulphate of lime and sulphate of magnesia was produced, equivalent to 1·134 grains of murite

of lime, and to $\cdot 395$ of a grain of muriate of magnesia.

D. The fluid from which the earths were separated by subcarbonate of soda, was neutralized by nitric acid, and then decomposed by nitrate of silver. A quantity of muriate of silver was obtained equivalent to $\cdot 5$ of a grain of muriate of soda, deduction being made for the proportion of the muriatic acid necessary for the constitution of the two earthy muriates, mentioned in the preceding section.

E. The saline residue insoluble in alcohol was digested in distilled water, and a further solution of its contents obtained. The matter insoluble in this menstruum being set aside for further examination.

F. The watery solution was divided into two equal portions. The one portion was decomposed by a solution of subcarbonate of soda, and a precipitate of carbonate of lime obtained, which, when dried, weighed one grain.

G. The other portion of the watery solution was treated in succession by nitrate of barytes, and by nitrate of silver. Precipitates were obtained of sulphate of barytes, and muriate of silver equivalent to $3\cdot 4875$ grains of sulphate of lime, and $\cdot 851$ of a grain of muriate of soda.

H. The substance insoluble in water was acted upon by acetic acid, assisted by a gentle heat a slight effervescence taking place. In this manner a further solution was effected, which, by the addition of a carbonated alkali gave a precipitate amounting to 3 grains of carbonate of lime.

I. The fluid from which the carbonate of lime was obtained, was treated with acetate of barytes, and a further precipitate was obtained of sulphate of barytes equivalent to 1.743 grains of sulphate of lime.

K. The substance insoluble in acetic acid, when dried, weighed 10 grains, and upon further examination was found to be composed of 9.5 grains of sulphate of lime.

L. The remaining .5 of a grain, resisted both the action of acids and alkalies; and from being almost entirely combustible, appeared to be extractive matter.

From this the direct mode of analysis, the composition of the water appears to be in one gallon, as follows:—

Of Gaseous Contents.	Cubic Inches.
Sulphuretted Hydrogen* . . .	20

* *Specific character.*—Smell of putrid eggs, *Taste.*—Nauseous and bitter. Sp. gr. 0.00135.

Carbonic Acid*	.	.	.	.	9.2
Azote	.	.	.	.	6.4
					<hr/>
					35.6
					<hr/>

Of the Solid Contents.

Grains:

Muriate of Lime	.	.	.	.	9.072
———— Soda	.	.	.	.	17.616
———— Magnesia	.	.	.	.	3.160
Carbonate of Lime	.	.	.	.	40.
Sulphate of Lime†	.	.	.	.	145.744
Extractive Matter	.	.	.	.	4.
Loss in the different experiments	.	.	.	.	4.408
					<hr/>
					224.000

Constituent Parts.—Hydrogen . . 6.244
 Sulphur . . 93.756

100 Berzelius.

* *Specific character.*—Elastic. Taste—Acidulous and pungent.

Constituent Parts.—Carbon . . 27.4
 Oxygen . . 72.6

100 Gay Lussac.

† I strongly suspect, that, previous to depriving the water of its gaseous contents, this salt exists in the form of a *Hydro Sulphuret of Lime*.

MEDICAL HISTORY.

ALTHOUGH chemical analysis is an important source of information, in making us scientifically acquainted with the nature of the medicinal substances held in solution in the Dinsdale Sulphur Water, and without which knowledge, our practice as regards this mineral water, would be a mere farrago of mystical empiricism; yet impartial experience and unprejudiced observation can alone give us a proper confidence in it as a remedy.

In forming our opinion of the activity of any medicinal substance contained in this water, we must consider that it exerts its influence under the most favourable circumstances. The ingredients are in a state of the most minute division; their vehicle is received into the stomach when free from food, and consequently act readily upon the whole surface of this organ. The simple circumstance of dilution will certainly facilitate the operation of substances, which might otherwise pass little changed, through the alimentary canal; and, from the extremely minute state of division in which the active particles are presented to the sentient mouths of the absorbents, it is more than probable that they are im-

mediately absorbed and carried into the circulation.

Dr. Saunders, in his excellent treatise on mineral waters, enters into a very elaborate and refined train of arguments, in support of the idea that dilution acts by presenting a greater surface of contact for the active ingredients, upon the nervous papillæ of the stomach. "The chemical analysis of mineral waters" says he "amongst several substances which appear to have but little effect on the human body, present us with a few, whose efficacy in the use of disease is undoubted, and which stand high in value on the list of *Materia Medica*. Every one however, who compares these natural medicines with those that are compounded by art, must be struck with the smallness of the doses that are employed of the former, compared with the benefits which are produced during their use; and he might hence be apt to put a wrong value on their real efficacy, if he were not aware of some circumstances which increase to an unusual degree, the activity of these substances. One which appears to me of no small consequence, is the extent of their dilution with water; for thereby, any medicine highly active in all states, is diffused equally over the extensive surface of the stomach, and is enabled

to act all at once in the most advantageous manner possible. It is true that the force of impression on any particular part is hereby lessened, and therefore dilution may be carried to excess; but the circumstance of extent of sentient surface acted on at once, will probably, in most cases, more than counterbalance this, and especially as the action is milder, the stomach may receive it much oftener. Besides these, we shall find that some of the foreign substances in mineral springs, though highly active in themselves, are never used under the same form of composition elsewhere than in these waters. This gives, in some cases, a superiority peculiar to these natural medicines. Of this kind is the carbonated iron, held in solution by carbonic acid, and the sulphur by hydrogen gas."

A celebrated physician justly observed, that "In all things which our art contains, there is nothing that does *good*, but that may also do *harm*," and that "when a *remedy* is used *indiscriminately*, it must of necessity very frequently be used *improperly*;" this observation can in no instance be more justly applied, than to the use of mineral waters; almost every individual considering himself capable of prescribing that, which in itself appears so simple; and very un-

pleasant consequences have frequently followed this abuse of a valuable remedy. This is of frequent occurrence; to which may be added a total disregard of dietetic rules, and the abuse of vinous and fermented liquors.

The invalid, in every instance, previous to commencing a course of the water, ought to prepare himself, by taking some mild aperient medicine, and if he be of a very plethoric habit of body, it will be adviseable to lose a little blood. As a general rule, a pill composed of calomel and extract of colocynth, may be taken at bedtime, and the usual black draught the ensuing morning. When this precaution has been neglected, the water has proved highly stimulating, and an unfavourable excitement has taken place, prejudicial to the state of the invalid. It is therefore essentially requisite, and should it so happen that the bowels are in a very sluggish state, it will be proper to continue the use of the aperient pill every other night, in conjunction with the water, until such state of the alimentary canal be removed. Or if this mild dose of mercury should disagree with the invalid, some other purgative may be substituted in its place. For as the water does not, in every instance, pass off by the bowels, but on some

constitutions acts more powerfully as a diuretic or an alterative, some aid may, in that case, be necessary; and the use of a purgative pill will occasionally be more beneficial than the addition of Epsom Salt to the water, for in many cases, it is our wish that the water should act as an alterative, which operation cannot reasonably be expected, if it is made to pass off by the bowels.

The invalid who is recovering from an acute disease, and resorts to the Spa for the complete restoration of his health, should be moderate at first, in the use of the water, particularly when there is a tendency to a lax state of the bowels; for by producing a violent action in the alimentary canal, the digestive organs will be weakened, and the cure retarded. As a general rule, only a sufficient quantity of the water should be taken to produce one healthy evacuation daily.

The same observations hold good, with regard to the use of the water as a bath, in both cases, a preparation is highly necessary; for independently of its preventing any unpleasant consequences, it will materially forward the cure.

The Dinsdale Sulphur Water, acts most favourably when taken fasting, but it is almost impossible to lay down a rule with regard to the quantity of this water which may be taken during

the day: almost every case requiring a peculiar mode of treatment, arising from the constitutional habit, or temperament of the individual.

As a general rule, when it is wished that the water should act upon the bowels; the patient should rise early, repair to the well,* and drink the water at the fountain; the medium dose may be stated at from three to four tumblers. A single tumbler of the water may be drank every quarter of an hour, taking exercise in the open air, if the weather permits, otherwise under cover, between each dose. After the proper quantity has been swallowed, it is useful to walk about for half an hour, or an hour, before taking any food.

It happens occasionally, that the stomach does not receive the water so well in its natural state of coldness; and when such is the case, it may be warmed a little, by the addition of a small quantity of the warm water; but its gaseous properties are more perfect in its original temperature.

When the water does not pass off readily by stool, then one half of the dose prescribed, may be taken warm, and the remainder cold, this will in general make it active; but if it is desired that the water should act as an alterative, rather than as an aperient, then only one half of the quantity

before mentioned should be taken before breakfast, and smaller quantities repeated at intervals during the day. According to the particular circumstances of the case, the age, constitution, &c., of the individual, the quantity now stated, may be increased or lessened. The quantity of water should not be increased, if it produces oppression or distention of the stomach, giddiness in the head, or difficulty of breathing. The best signs of any given quantity agreeing with the system, are a moderate increase in the natural evacuations, by stool and urine; and when the constitution has reached the point of saturation, the use of this water should not be suddenly discontinued, but diminished as regularly as the dose was increased. It is not prudent to drink the Dinsdale Sulphur Water, or use the warm bath *in the evening*, as the doing so is sometimes followed, particularly in irritable habits, by fever, head ache, and a sleepless night.

In order that the invalid may derive permanent benefit from the use of this water, he ought to persevere in its use for a month or six weeks. It frequently happens, that during a course of this water, a papular eruption makes its appearance upon the skin, an occurrence which I have always hailed with pleasure, as immediate

relief from gastric or enteric irritation is the immediate consequence. This eruption usually disappears in a few days after discontinuing the water, leaving the skin soft, pliable, and healthy.

The water will bear removal, and will keep, without any material diminution of its gaseous properties, 'provided proper care be observed in corking and sealing it down in pint bottles, and putting it in a cool place. By adopting these precautions, the use of it may be resumed at intervals when the individual has returned home.

INDIGESTION.

PERHAPS there is no disease which appears under such a variety of forms, which is the fruitful parent of so many diseases, and the cause of such intense suffering to the patient, as Indigestion; and as it is the author's wish to render the following pages, as useful and consequently as easy to be understood as possible, it will not be foreign to his present purpose, even though he may be thought tedious, to give a slight sketch of the anatomical structure and physiology, of the digestive organs.

The stomach is situated on the left side below

the short ribs, its figure nearly resembles the pouch of a bagpipe, its upper surface being concave and the lower convex, and the left end most capacious. The entrance into the gullet on the left side, is called the *cardia*, and the right, where the food which after being mixed with the gastric juice, and converted into a soft pap, called chyme, passes into the small bowels, is called the *pylorus*, where is situated a circular valve which prevents regurgitation of the aliment. The intestinal canal is usually five times the length of the body, is curiously convoluted or folded up in the abdomen; and is divided by anatomists into six portions, but for every useful purpose may be divided into two portions; the small and the large intestines. At a short distance from where the small gut joins the stomach, the gall duct from the liver, and the pancreatic duct, from the pancreas, or "sweet bread" as it is commonly called, open into it; from the one it receives the bile, and from the other the pancreatic juice. The bile and the pancreatic juice, assisted by the peristaltic motion of the intestines, being intimately mixed with the chyme, a milk-like fluid is separated, termed chyle, which is absorbed by certain vessels called lacteals, and conveyed through the mesentery, into the thoracic duct,

to be sent into and mixed with the blood, to form new blood; after the bile has effected this purpose, its oily, bitter, and colouring principle adheres to the excrementitious mass, and gives it stimulant properties. The excrementitious particles of the food, facilitated in their progress, by mucus, secreted from the inner membrane of the intestines, are propelled through the large bowels and ultimately expelled.

Digestion, i. e. the conversion of the food into chyle, is usually effected in three hours; the progress of alimentary matter in its passage through the small intestines, being much retarded by the winding of the canal; thus allowing the chylous or nutritive part to be entirely separated.

An organ intended for such important purposes in the animal economy, has received from the hand of nature singular tokens of her favour. Thus we find all those viscera, which assist in what is called the assimilation of the food, joined in a circle of *nervous communication*, of which the stomach is the centre; one portion of nerve is distributed over the whole; so that while they are all employed in one grand purpose, disorder, cannot take place in any one of them, without the whole system being affected.

The nerves of the stomach are derived from

the *par vagum*, or eighth pair of nerves. The *par vagum* connects the windpipe, lungs, heart, and stomach, communicates with the great sympathetic nerve, and by it, is connected with every nerve in the body, and the sympathies produced by this nervous chain of communication in health and in disease, are very many, connecting as it does the vital, the animal, and the natural functions with each other.

But the eye of the anatomist does not discover the whole important station, which the stomach holds in the animal economy, it is to the living system, we must look for those nice connexions of cause and effect, which unite it with so many organs—both in the healthy and diseased state; for there is no disease in which it does not participate. For example, a disorder of the stomach, will derange the secretion of the windpipe; and a vomit or nauseating medicine will loosen the viscid secretion of the windpipe. Disorder of the stomach, acting through the pulmonic plexus of nerves, will occasion cough or asthma, and certain medicines acting upon the stomach will alleviate cough or asthma. Through the plexus of this nerve, the heart and lungs are united, ever corresponding in action; hence when life seems extinguished by suffoca-

tion, in experiments upon animals, pricking the heart, will be followed by respiration, and in the apparently drowned, the play of the lungs stimulated by artificial breathing, will produce action of the heart and restore animation. Although the heart and stomach are separated by the diaphragm, yet by means of this nervous cord they are united, and thus is explained, why disorder of the stomach does produce such changes on the heart's action; hence the pause or intermission in the pulse, palpitation of the heart, which in many diseases, is a fatal symptom, is very frequently produced, in a manner less alarming, merely by irritation in the stomach. Examining carefully the distribution of the *par vagum* upon the stomach, and the plexus of the nerve in its course upon the gullet and windpipe, it will not appear surprising that disorders of the womb, affecting the stomach; and also that disorder of the stomach itself should produce, *globus hystericus*, or spasm of the windpipe and gullet, causing a sensation like that of a ball rising in the throat, and feeling of immediate suffocation. Seeing the many connexions of the stomach with the vital parts through this nerve, we can readily understand why a blow upon the stomach should prove instantly fatal, by suddenly

paralysing the vital principle in the nervous system, supplying those muscles over which we have no controul, and hence called the involuntary muscles—as the heart, &c. In short by means of this nerve are united, not only the heart, lungs, larynx, and stomach, but also the liver, pancreas, spleen, kidneys, womb, bladder, and all the abdominal viscera, each of which, has the power of performing to a certain extent, its own peculiar functions, and supposing this nerve to be divided, the connexion between all the organs of life, and also betwixt them and the external muscular apparatus, upon which the perfection of the economy of each depends, would be totally destroyed.

After the healthy stomach has been replenished with a full meal, a pleasing languor is diffused over the whole frame, sometimes followed by sleep which is easy and sound; and now commences the process of digestion. Every pore, vessel, duct, or gland engaged in this important process contributes a share of soothing influence to the dormant animal functions, and the healthy man arises refreshed and invigorated in body, with all his faculties equally clear and renovated. But the dyspeptic stomach exhibits a very different train of sensations; after the repast, sleep rarely closes

the eyelids of the sufferer ; a crowd of unpleasing images disturb the mind, flatulence, acidity, and nightmare distress the body, digestion goes on imperfectly, and the dyspeptic arises low, languid, unrecruited, and sick at stomach.

In indigestion it is not the stomach alone that is diseased, but every gland, pore, exhalent or follicle that separates either gastric juice or mucus, and consequently not only are all the fluids poured forth in a vitiated state, but the blood, the fountain of life is corrupt. The appetite is irregular, sometimes suppressed, sometimes voracious, the acidity increases so as to become painful, the food remains undigested, uneasiness and inflation of the stomach succeed, the other viscera, by nervous sympathy, become deranged in their respective functions, the liver secretes the bile different both in quantity and quality from the healthy state, the peristaltic motion of the intestines is inverted and inconstant ; and sickness, constipation, or diarrhœa, is the consequence. The kidneys, though more remotely connected, discover indisposition, by the urine being voided turbid or pale, in spare or profuse in quantity, frequently with pain in the loins or bladder. Those uneasy sensations which arise in the throat and there give the idea of strangulation are of

frequent occurrence, the lungs expand with difficulty, the breast labours, the heart palpitates, the eyes grow dim, giddiness and confusion of thought comes on, and the patient sometimes falls down convulsed with epilepsy or hysteria.

The causes of indigestion may be divided into two kinds; those which arise from the mind, and those which arise from the body. Thus any violent passion of the mind, as anger, joy, grief, &c., destroy the appetite, disturb digestion, prevent sleep, make the breast labour, the heart palpitate, render the mind unstable, &c. The mind and body being as we have seen, connected by the nervous system, the same train of symptoms appear when those causes are applied to the body, which in the first instance, affect the digestive organs, such as perseverance in a course of continued indulgence, debauch, &c.

“So long as life,” says an ingenious author, “is admitted to be the result of the co-existence of mind and body—so long as we are convinced of the intimacy of their union, by the manner in which they reciprocally sympathise with each other—so long as we perceive the powers of the mind augmenting with health, and diminishing with disease—so long as we observe that the mind is incapable of occupation when the body is wea-

ried by violent exercise, and in its turn unfitted for exercise, when the mental powers are fatigued by over exertion of the former—we can arrive but at one conclusion, that the balance of health can be maintained in its natural equilibrium, only when mental exertion is proportioned to bodily activity. When this is not the case, literary fame is dearly purchased; and all the glory that surrounds it, cannot make amends for the health that has been sacrificed for its attainment “*On est trop savant quand on l'est au dépens de sa santé; à quoi sert la science sans le bonheur?*”

In conclusion, there are a few words of Tissot's, which serve the purpose of a summary of the preceeding observations. To comprehend the influence of mental labour on physical health, it is only necessary to remember, in the first place, that the brain is in action when one thinks; secondly, that the tendency of continual action is to produce fatigue, and that fatigue deranges the functions, because every debilitated organ performs its duties imperfectly and irregularly; thirdly, that all the nerves proceed from the brain, and precisely from that part of it which is the organ of thought, the common sensorium; fourthly, that the nerves are one of the most important parts of the human

machine, that they are necessary to every function, and that when once their action is deranged, the whole animal economy suffers from that derangement.*

The man who devotes the greatest portion of his time to intense study and the acquirement of mental knowledge,—and the man whose whole soul is intently bent upon the acquisition of worldly wealth—the man who thinks much and intensely, whether in his study or in his counting house, in general leads a sedentary life; shut up in a close apartment, but little exposed to the pure air of heaven, his countenance becomes sallow, his flesh soft and flabby, his muscular power diminished, and general debility is the consequence. The very posture of the studious man at his desk is unfavourable to health, the lungs are seldom expanded by a full inspiration, the pulmonary organs lose their vigour, and the blood that floridity which is necessary for vital energy, and a glowing complexion. All the secretions, and their excretories fall into inaction from want of muscular motion, and the whole system sinks into listlessness and inacti-

* See a very clever and highly interesting work, by R. R. Madden, Esq. entitled, the “Infirmities of Genius, &c.”

vity; in fact the mind wears out the body. No one but a dyspeptic man, who is acquainted with the moral martyrdom of the disease, can understand the degree of exhaustion to which the mind is reduced, and the insupportable sense of sinking in every organ of the body, which drives the sufferer to the use of stimulants of one kind or another. Whether wine, alcohol, ammonia, or the black drop, it is still the want of a remedy, and not the pleasure of the indulgence, which sends the hypochondriac to that stimulant for relief.

The abuse of stimuli, are similar in their action upon the animal economy. In the first place, they assail the nervous system, and all other effects are secondary; the nerves of the stomach receive the first injury; but, as we have already seen, so intimately are these nerves connected with the whole of the abdominal viscera, that they immediately suffer from sympathy; the stomach, intestines, pancreas, liver, and ducts, become thickened and grow torpid by long continued indulgence, and unequal to their functions, and hence we have numerous instances of indigestion, melancholy, jaundice, and other diseases of the digestive organs.

My reader must not run away with the

impression, that every disease originates in a disordered state of the digestive organs; for although a disordered state of the stomach and bowels is very frequently the *exciting cause* of disease, yet in many instances *the original disease* has its seat elsewhere, is trivial, and would soon cease, if the *diseased action* was not *kept up* by the deranged state of the digestive organs, which *it had induced*. In all acute diseases, the action of the digestive organs is suspended, and in all chronic diseases they suffer in proportion, to the nature and violence of the malady.

If we now inquire, in what manner does the Dinsdale Sulphur Water act upon the system? We find in addition to the aperient properties, which it derives from its solid contents, that it is powerfully alterative* and antiphlogistic,† and hence its utility, not only in indigestion and diseases of that class, but also in all cases of chronic inflammation, comes to be understood; and our surprise at its efficacy in removing so many diseases, each apparently of a different nature will cease.

* Those medicines are called alterative, which gradually re-establish health, without producing any sensible evacuation.

† Opposing inflammation.

An eminent writer observes, “during a series of years, I have traced the operation of the sulphuretted hydrogen gas, from one organ of the body to another, from the skin, joints, and eyes, to the viscera of the head, chest, and belly: and the sum of my observation authorises me to declare that it is one of the most powerful antiphlogistic agents which can be found, for wherever the chronic inflammation be seated, it will more frequently remove it than any other single expedient, which has hitherto been used and recommended by the medical faculty.”*

The limits of this tract will not allow me to enter into any extended considerations of the particular nature and treatment of all the different diseases in which the Dinsdale Water may be used with advantage; I shall therefore confine myself to general remarks; occasionally pointing out that plan which I have observed to be most successful in the removal of disease.

IN **DYSPEPSIA** and **HYPOCONDRIASIS**, the Dinsdale Water is a remedy of decided efficacy: but too much caution cannot be observed in the use of it, particularly in the latter form of the

* Dr. Armstrong; see his work on Scarlet Fever, Measles, &c. &c.

complaint. When the disease depends upon a debilitated state of the digestive organs, the water ought to be taken as an alterative, rather than as an active aperient. But when, as is more frequently the case, the disease arises from a course of repletion, or from the habitual use of vinous or spirituous potations, the water may be taken more freely with advantage; but in this, as in every other case, particular care ought to be taken not to distend the stomach, by drinking too much of the water at one time. In both cases, a due preparation must be observed previous to making use of the water at all; and I wish in this place, once for all, to impress upon the invalid, *the absolute necessity of a proper preparation in every case.*

Individuals labouring under diseased action of the liver, whether arising from chronic inflammation, or obstruction of the biliary secretions, will derive great benefit from the use of the water; upon this organ, it has a specific effect, rapidly subduing inflammation, and producing healthy action; at the same time, the continued use of it does not produce debility, and the other unpleasant symptoms induced by a course of medicine.

T. W. aged 25, complained of loss of appetite, sickness, headache, debility, and constipated state of the bowels; the alvine discharges were most offensive, the pulse small and quick, he passed sleepless nights, and there was a slight tenderness in the region of the liver. I gave him a purgative pill to take at bedtime, and the usual black draught the following morning, but as his bowels were particularly costive, I directed him to take a purgative pill every night in conjunction with the water, and to use the warm bath. When he had followed this plan for a fortnight, his bowels became more regular, his appetite and strength improved, the tenderness in the side vanished, and he slept well; and at the expiration of three weeks, every unpleasant symptom was removed.

I have previously remarked, that the water is apt, occasionally, to produce an eruption upon the surface, but I never saw it in so violent a degree, as in the present case, it however went off in a short time after he discontinued the use of the water.

July 3rd, 1825, T. G. aged 32, complained of pain in the right side, which was increased by pressure, a numbness in the right shoulder, loss of appetite, short dry cough, a constipated

state of the bowels, furred tongue, thirst, and watchfulness, the skin was dry and harsh, and had a yellow tinge occasioned by the absorption of the bile, the pulse quick and irritable; he had been getting gradually worse for a month. I applied a number of leeches, and a blister to the side, directed him to take a pill, composed of calomel and extract of colocynth, every night, to use the warm bath, and to drink freely of the Dinsdale Water.

July 6th. The pain in the side much easier, the bowels more regular, but the discharges black like tar, and most offensive, the warm bath had had a most soothing effect.

July 12th. Considerably improved, the pain in the side and cough quite gone, the evacuations more healthy, the skin moist, the pulse full and soft, and sleeps well,

From this time his recovery was rapid, the jaundiced state of the skin disappeared, his appetite improved, &c., and in the course of a month he was quite well.

Mr. P. aged 45, complained of pain in the right side, increased by pressure, loss of appetite, palpitation of the heart, cough, harsh dry skin, pulse 100, lax state of the bowels, the evacuations most offensive; he was much reduced, his

countenance anxious, with quite a cadaverous appearance. After using the warm bath every other day, and taking the water as an alterative, for six weeks, he returned to his family quite well.

A gentleman, aged 40, had laboured under an affection of the liver for twelve months, he complained of irregular appetite, occasional sickness, and vomiting of bile, the alvine secretions sometimes black, but more frequently the colour of pipe clay ; he did not complain of any acute pain in the region of the liver, neither was much inconvenience produced by pressure upon that organ, pulse 98, the skin charged with bile, and he laboured under great depression of spirits. By drinking the water and using the warm bath daily, for three weeks, he was restored to perfect health.

Mr. —, aged 43, had laboured under an affection of the stomach for *sixteen years*, during which time he had been under the care of several medical gentlemen in Sunderland. He complained of pain in the stomach, which was always increased upon taking food, and from which he obtained no relief until the stomach was emptied, either by the process of digestion, or, as was more frequently the case, by the food being re-

jected ; he was much reduced, his bowels tolerably regular, and he laboured under great depression of spirits. By drinking the water and bathing for three weeks, he was able to return home quite well, in fact he never suffered from the pain after he had taken the water ten days.

There are many cases of diseased liver, accompanied by such an impaired state of the system, that the employment of active medicine would be hazardous ; such cases will experience more benefit from a course of this water, properly conducted, than from any single medicine, in the *Materia Medica*, with which I am acquainted. Cases of this description are not unfrequently accompanied, by a most obstinately constipated state of the bowels ; it is however, an encouraging consideration to the invalid, that when this state of the bowels is once removed by the action of the water, it is not so liable to recur, as after the use of the drastic purgatives usually employed ; the effect of the water appears to be more lasting, which, in every case of disease but more particularly in diseases of this class, is an object of very great importance.

The term *bilious*, has of late years become quite a hackneyed expression, being applied to every disordered state of the digestive organs,

whether the liver be torpid in its action, in the secretion of bile, or in a state of irritation, secreting it in excess. In either case, the invalid will derive benefit from the Dinsdale Water; having frequently remarked, that upon this organ it seems to possess an effect, almost as specific as that of mercury.

The jaundiced patient will require more preparation, and greater attention in the combined use of medicine, particularly when the disease has been of long standing, but I have rarely met with a case that did not ultimately yield to a proper plan of treatment.

June 28th, 1830, Mr. K——, of Barnard-Castle, about 50 years of age, consulted me, he had been ill four years, and his medical attendants had in the common phrase “given him up.” He complained of violent pain and palpitation in the pit of the stomach, loss of appetite, irregular bowels, and want of sleep. His skin was hot and dry, resembling in colour old parchment, his tongue parched, pulse 130, breathing laborious, feet and ankles swollen, countenance anxious, he was a mere shadow, could scarcely walk, and looked more like a mummy than a living man. This man continued under my care until September following, during which time he used the

warm bath almost daily, drank freely of the Dinsdale Sulphur Water, and with a very trifling assistance from medicine, on the eleventh of that month, he returned home cured, to the astonishment of his fellow-townsmen. In the year following, he had another attack, which yielded to a similar plan of treatment; but in the summer of 1832, he sent for me to Barnard-Castle, when I found him labouring under such extensive disease, that there existed not the most remote prospect of his recovery, and he shortly afterwards died.

August, 1831. Mrs. H——, aged about 65 years, had been ill for many years, during which period, she had cultivated a most extensive and expensive acquaintance with the faculty, without deriving any benefit. She complained of a constant gnawing pain in the stomach, always increased after taking food, and sometimes so acute, as to cause fainting, followed by a vomiting of bile, particularly after breakfast. Her bowels were very irregular, the evacuations being sometimes of the colour of pipe clay, sometimes black like tar, and alternately she suffered from constipation or diarrhœa; tongue brownish white, appetite bad, pulse 90, thirst, and a dry harsh skin of a deep yellow colour. I

could not detect any tenderness, or pain, upon pressure in the region of the liver, which appeared to me rather smaller than usual, for she was so attenuated, that I could distinctly trace it through the abdominal muscles. She had gone through courses of mercury times out of number, and appeared to have digested the whole of the *Materia Medica*, in addition to sundry vials of quack medicines. My patient began at once to drink the Dinsdale Sulphur Water, and use the warm bath daily, the only remedy employed in addition, in what really appeared to me a hopeless case, being the use of the nitro-muriatic acid bath, in which she sat up to the knees every night before going to bed. It was wonderful how this lady improved in the short space of three weeks, when she became "home sick," and in the early part of September, she was returned upon my hands, in the same state as when I first saw her. Again we had recourse to the same plan of treatment, and in the latter end of October, she went home, cured. I have seen her frequently since, for she never comes into the neighbourhood without giving me a call, and she has never had any return of her complaint.

PALPITATION OF THE HEART, is a frequent attendant upon a disordered state of the digestive

organs, particularly when the disease is of long standing, and sometimes from its violence, constitutes a leading symptom in the complaint; the patient referring all his suffering to the diseased action of the heart; and as it is well known that this symptom is always present in a greater or less degree in disease of structure of the heart itself or of the large vessels, the invalid frequently sinks into a desponding state, from which all our efforts to rouse him are fruitless. I subjoin the following cases, in which the Dinsdale Water was evidently of great service.

Mr. —, aged 55, informed me that for eight months, he had laboured under an occasional irregular action of the heart, and that sometimes, the palpitation was so violent as to be evident to the naked eye; he was under the necessity of taking strong purgative medicine daily, in order to keep his bowels at all regular, and, if he failed in doing so, he was sure to suffer severely from an attack of palpitation. His countenance betrayed great anxiety of mind, his breathing short and oppressed, pulse 90 and irregular, appetite bad, foul tongue and dry skin. I directed him to take two tea-spoonsful of Epsom Salt in a tumbler of the Spa water every morning, and to use the warm bath every day, omitting the use of

all other medicine. After he had pursued this plan for a fortnight, he was much relieved, and it became unnecessary to continue the Epsom Salt, as the water acted upon the bowels without any assistance. In six weeks he returned home much improved, and he some time after informed me, by letter, that he had not again suffered from a return of the palpitation since he left Middleton, but that his bowels had continued regular, rarely having occasion to use laxative medicine.

Mrs. ———, aged 47, complained of violent palpitation of the heart, from which she had suffered severely for five months, shortness of breath, loss of appetite, costive bowels, the evacuations black and offensive, she passed sleepless nights, pulse 84, and intermitting every tenth stroke. Upon enquiry I found that the disordered state of the digestive organs, had preceded the diseased action of the heart. By adopting a plan of treatment similar to that mentioned in the last case, she rapidly recovered, and continues to enjoy good health.

When diseased action of the heart has continued for any length of time, it may become permanent, and is in many constitutions, followed by the effusion of the serous or watery part of the blood, into the cellular texture of the lungs,

or into the cavity of the chest; neither is this circumstance to be wondered at, for we have seen when taking a survey of the physiology of the digestive organs, that the heart and lungs ever correspond in action—that an increased action of the heart cannot occur, without an increased action of the lungs taking place; the blood consequently accumulates, or does not circulate freely through the lungs; the exhalents pour out their fluid more rapidly than the absorbents can take it up, and hydrothorax or water in the chest, is the result. This disease is also very frequently the consequence of inflammation on the chest, but in the present instance I am confining my remarks to that form of the disease originating in a disordered state of the digestive organs, and which is of more frequent occurrence than is generally imagined.

When affections of the chest arise in consequence of disease in the liver, or stomach, it will be necessary (in addition to the remedies employed, as recommended in such cases) that the invalid should take some preparation of mercury, so as to produce a sensible effect upon the system, as it will be evident to any one that no *single* remedy, in such a violent case of disease, will be of much service. The use of the Dinsdale

Water, both internally, and as a warm bath, will materially forward the cure, but in such cases, it will not be prudent to rely upon its efficacy alone.

———, aged 56, of a thin spare habit, laboured under oppression of breathing, particularly on motion, and when in the horizontal posture; difficulty of lying on the left side, horrible dreams, sudden startings from sleep, with palpitation of the heart and sense of immediate suffocation; cough, frequent attacks of faintness, thirst, and loss of appetite, &c. His feet and ancles were much swollen, bowels constipated, pulse irregular, urine high coloured, scanty, and upon cooling deposited a pinky sediment. His medical attendants, had pronounced his case, to be organic disease of the heart, and had sent him to Dinsdale for the general improvement of his health. Upon listening carefully and attentively to this gentleman's own account of his case, I was led to take a very different view of the origin and nature of his disease, and proposed to him a plan of treatment, which he immediately adopted. In the first place leeches, and a blister were applied to the chest, a smart purgative was administered; and now having paved the way for the Dinsdale Sulphur Water, he began to drink the

same, using the warm bath daily. By persevering in this plan for two months, with a very trifling assistance from medicine, I had the pleasure of seeing him return home cured.

In almost all cases of diseased action of the heart, whether arising from organic disease, or symptomatic of disease in other organs; I have ever found local blood-letting by leeches, or cupping, more decidedly useful, than the abstraction of blood from the arm; indeed in many organic affections of the heart, bleeding from the arm, will be followed by immediate dissolution.

April 1832, Mr. S——, aged 65, sent for me to a neighbouring town. I found him raised up in bed supported by pillows, being unable to breathe in the horizontal posture; he could not lie down, or repose on either side; for two months he had obtained but little sleep, and that of the most disturbed kind, from which he suddenly awoke with a sense of immediate suffocation and violent palpitation of the heart. He had a troublesome cough, great thirst and loss of appetite, constipated bowels, urine scanty and depositing a sediment, pulse very irregular, his lower extremities much swollen, his countenance pale, and betraying great anxiety of mind. Upon examining the chest by means of the stethoscope, I was satisfied that very

considerable effusion had taken place into the cavities of the chest. Mr. S—— informed me that his medical man had pronounced his case to be organic disease of the heart, and upon giving him my reasons for holding a contrary opinion, he cheerfully acquiesced in my proposed plan of treatment. Leeches and a blister were applied to the chest, and I prescribed certain purgative medicines, in the use of which he persevered for a week, at the expiration of which period of time I again visited my patient: I now found him seated in his parlour, he accosted me with a cheerful countenance, informed me that after the use of the measures I had propounded to him, he had gradually improved, and had obtained some sound sleep, his pulse was still irregular, and upon again examining the chest with the stethoscope, the fluid in the chest although much diminished, was considerable in quantity, but his general health being much improved, and the prospect of his ultimate recovery more than probable, I recommended his removal to my immediate neighbourhood, in order that I might daily watch over his case. The day following he took lodgings in Hurworth; he began to drink the Dinsdale Sulphur Water, use the warm bath daily, and with some slight assistance from me-

dicine, in the latter end of June, he returned to his family in good health. I must confess that I looked upon my patient with some degree of pride, as he drove out of Hurworth; for there is something noble, I had almost said god-like in the act, in being the humble instrument in the hands of our GREAT CREATOR, in raising a fellow creature from the bed of suffering and of sickness, and placing him amongst his fellow-men; which causes a warm sensation, and feeling of satisfaction in the breast, far above all pecuniary reward. But my patient was a *bon vivant*, he very soon forgot his sufferings, and my cautions, he returned to his wine cup, and his favourite highly seasoned dish, and the consequence was, that he returned to his physic, and the Dinsdale Sulphur Water, in September. Again he was cured—again he returned to his home—again he forgot his past sufferings, and in the spring of 1833, he died.

I could produce many cases of a similar character, in which the Dinsdale Sulphur Water has been a useful agent in the removal of disease, when properly assisted by medicine, for there are certain medicines, which produce a more powerful effect, when combined with the use of this water, than when such medicines are employed

alone. But the cases related, are sufficient for every useful purpose, and the relating of others would only swell the present publication to an unnecessary expence.

My reader will observe, that I have not refrained from giving those cases which terminated fatally, as well as those cases which were cured, by the assistance of the Dinsdale Sulphur Water, at the same time having pointed out the rocks upon which my patients suffered shipwreck, it remains for the reader to avoid the same, and to make the application.

DIABETES.

DIABETES, is characterised by a gradual emaciation of the whole body, great weakness, weariness, and disinclination to motion or exertion, a frequent discharge of urine, containing a large portion of saccharine and other matter, and which is voided in a quantity far exceeding that of the aliment or fluids introduced into the body, a voracious appetite, constipation of the bowels, dryness and harshness of the skin, great thirst, a sense of weight in the kidneys, and pain in the urinary passages. The temperature of the body is below the standard of health, the spirits are

depressed, the disposition is equally indifferent to study or amusement, and there is evidently a decline of mental energy. When the disease has continued for a length of time, the patient becomes much emaciated, the feet and ancles swollen, accompanied with great debility and hectic fever. The urine from being at first insipid, clear and colourless, acquires a sweetish or sugary taste, and cases are recorded, where the quantity voided in the space of one day, has exceeded thirty pints, and this has continued for many successive weeks, nay even months, during which period of time, the whole of the food solid and fluid, received into the stomach, has not amounted to one half of the weight of the urine voided. As the disease advances the lungs become diseased, and abscess forms in the chest, but this circumstance is of very frequent occurrence whenever the body has been worn out by long continued disease, whether the original disease has its seat in the internal parts of the body, or in the extremities, and is therefore of a secondary nature.

Dr. Rutherford found upon examining the blood of Diabetic patients, that it was deficient in the usual quantity of hydrogen gas. He supposes that this deficiency of hydrogen gas has

been consumed, by uniting, in the lungs, with the oxygen of the atmosphere, and thus forming water, and that the water thus generated, is taken up by the lymphatics, carried to the bronchial glands, and through them poured into the general mass of blood, whence it is eliminated by the kidneys.

Diabetes is a frequent attendant upon indigestion, melancholy, and asthma, and occasionally arises from exposure to cold, and suppressed perspiration ; but the immediate cause of this disease appears to me to consist in a morbid change in the natural powers of digestion ; for in this disease it is not the *kidnies alone*, which take on a diseased action, but every organ concerned in the assimilation of the food. Witness the constipated bowels, the voracious appetite, the extreme thirst, and dry harsh skin ; the formation of a saccharine acid in the stomach, which passing into the circulation, and every other outlet of the body being as it were locked up, the kidnies are stimulated to increased action ; and an increased flow of the urine, the most prominent feature in the disease, is the consequence.

Let my reader for one single moment consider that the fine vascular membrane lining the cavity of the mouth, gullet, stomach, and intestinal

canal, is a continuation of the skin covering the surface of the body, a fact of which he will be perfectly satisfied by examining his own lips; and he will readily understand, why a dry and parched skin is invariably accompanied by a constipated state of the bowels; and also how it occurs, that the most active purgatives are so frequently useless, until the skin is in some degree restored to a healthy state. Let him again consider the great sympathy which exists between the skin and the kidneys; that in summer when the action of the skin is much increased, and the perspiration copious, the secretion of the urine is much diminished in quantity; and in winter, when the insensible perspiration is diminished, the flow of the urine is proportionably increased; thus keeping up a certain equilibrium of the fluids in the system. Again, the first symptoms of recovery from this rare, and hitherto rarely cured disease, consist in great abatement of thirst, and extraordinary desire for food; the *skin becoming soft to the touch, and perspirable*, the bowels more lax, and the urine voided less frequently, and in smaller quantity. Bearing all these points in mind, my reader will the more readily comprehend the rationale of my plan of treatment, which has yet a better recommendation, that of being most successful.

It is not necessary in this place to discuss the question, as to whether the diseased action first commences in the kidneys, or whether the digestive organs are primarily affected; but it will be very evident to any one who has carefully perused the foregoing statement, that the first step in the cure of this disease, is to restore the skin to a healthy state. Indeed, I have never known any medicine produce any good effect, until some action has been produced upon the surface of the body. In bringing about this event, the Vapour Bath is an agent of the most decided efficacy, and ought to be used daily. The next point to be attained is the restoring to a healthy action, the stomach and bowels; and in attempting this, such medicines ought to be preferred which will not only operate in the removal of constipation, but also destroy the saccharine acid in the stomach; such for instance as the bicarbonate of magnesia, combined with rhubarb; or such other purgative as may be indicated by the peculiar state or constitution of the invalid.

Sulphureous Waters have been long famed in the cure of Diabetes, and in the preceding pages I have attempted to explain their *modus operandi*. In their operation upon the human frame, they are far from possessing the active properties

of many medicinal compounds, and it is perhaps to their slow but sure virtue of restoring the digestive organs to tone and vigour, that they are more successful than the substitutions of art. For when an individual has long suffered from chronic disease, we cannot be too careful in the choice, and in the activity of the remedies employed, or too watchful over the remaining strength of the patient ; lest by employing too active a medicine we exhaust the little stamina left in the constitution, and send the unfortunate sufferer to his grave.

The only writer I have met with upon this disease, whose opinions, as to its cause, coincide most nearly with my own, is Dr. Rollo. Yet he denies that the skin has any connexion with the production of the disease, and consequently his plan of treatment is defective. His principal dependence in the removal of this disease, is placed in the *sulphuret of potass* and *sulphuret of ammonia*, medicines not half so efficacious as the Dinsdale Sulphur Water ; in as much, that in the most careful compounding of the before-named medicines, their virtues are dissipated and lost, by losing their sulphuretted hydrogen gas, upon which alone their efficacy depends.

But what will my reader think when he is in-

formed, that, up to the present period, the practice which has most obtained in this disease, has consisted, in pouring into the patient's stomach, the most powerful astringents which the *Materia Medica* can boast; and alum, kino, catechu, opium, chalk, &c., have been *exhibited*, I think they call it, in all their power. The sword has slain its thousands, but practice like this, has destroyed its tens of thousands.

Since the publication of the second edition of this treatise, I have met with nine severe cases of this disease, a circumstance for which I am almost entirely indebted to my vicinity to the Dinsdale and Croft Sulphur Springs. My reader may perhaps imagine that as Diabetes is a rare disease, I might have saved myself much trouble by passing it over in fewer words, but as I wish not only to be clearly understood, but also to be useful in my vocation, I beg that he will pardon my verbosity.

The diet of the invalid labouring under Diabetes should consist entirely of animal food, abstaining rigidly, from vegetables, sugar, and all saccharine solids or fluids; his drink, lemon-juice and water, or strong coffee, without sugar or cream.

June 1st, 1832. J. H., aged 25, had laboured

under Diabetes nine months ; the quantity of urine passed in the twenty-four hours, amounted to nineteen pints, and had the usual peculiarities characteristic of the disease. His appetite was voracious, thirst great, skin dry, harsh, and scaly to the touch ; bowels confined ; he had not slept for weeks ; pulse small, weak, and thready ; he complained of an obtuse pain or sensation of weight, alternating with sharp lancinating pains, in the region of the kidneys ; his feet and ankles were much swollen. His countenance was dull, his eye heavy, and it appeared to be quite an exertion to him to answer my questions. Upon carefully examining the region of the kidneys, he complained of increased pain upon pressure, &c. He had a short dry cough, his lungs being evidently affected.

Finding the father of this young man well informed, I explained to him the plan of treatment I wished to adopt ; and I have ever found when conversing with sensible men, such a proceeding most conducive to the welfare of the patient ; they become doubly interested, and are attentive to the most minute direction ; seeing that it makes a part, though only a minute one, conducive to one great end and purpose.

Leeches were applied to the region of the kid-

nies; and at this time there being no vapour bath in the neighbourhood, I sent my own portable vapour bath to his lodgings; this he made use of daily; means were employed to open his bowels, and he was put upon the diet mentioned in a preceding page. On the 6th of June, the quantity of urine passed in the twenty-four hours, was diminished to twelve pints; his skin had lost its harshness, having by means of the vapour bath and the flesh brush, actually peeled off in huge patches; his cough was less troublesome, his thirst diminished, his bowels regular, his countenance more animated, and he informed me with tears in his eyes, that he had slept. He now began to drink the Dinsdale Sulphur Water, being limited to four pints in the twenty-four hours, and from this time his progress towards recovery was rapid. I am not one of those philosophers who refine upon nature, who keep their patients in a pair of scales, weigh out their food by the ounce, and would if they could do so, measure out the air they breathe by the square foot—but I am satisfied with a few plain practical facts. Under the old plan of treatment, this young man was rapidly posting to that “bourne from whence no traveller returns.” By adopting the very opposite plan of treatment, he was restored

to health and strength; is now married, and a parent.

Out of nine cases treated in a similar manner, eight recovered; and lest my reader should consider that I do not act fairly, I subjoin the case which terminated fatally.

Mr. B——, aged about 24 years, sent for me, June 8th, 1832. I found him labouring under Diabetes in its most aggravated form; he had been ill two years; he was wasted to a mere shadow; the quantity of urine passed in the twenty-four hours, varied from twenty to twenty-two pints; appetite voracious, skin dry, harsh and horny to the touch; in my own mind I compared it at the time, to the back of a dace, which had been exposed for a summer's day to the sun. Bowels not opened for ten days; although he had taken two large boxes of pills, apparently the compound colocynth pill combined with calomel; and had swallowed some scores of "Morrison's Pills," a vile compound of gamboge, scammony, and other drastic purgatives, which in many cases prove deadly poisons. His pulse was small, weak, and thready; he had not slept for weeks; his feet and ancles were much swollen; he complained of great pain in the loins; had a short dry cough, his lungs were evidently diseased, and

he laboured under hectic fever. In short, it has rarely fallen to my lot to behold a fellow creature in a more deplorable state ; and his friends considered that twenty-four hours would put a period to his sufferings. This unfortunate young man had been dosed with astringents, in the shape of catechu, kino, and opium.

Mr. B., Senr. readily entered into my plan of treatment. No vapour bath could be obtained, but one was constructed as speedily as possible ; and in the interim leeches were applied to the region of the kidneys, and the bowels opened by laxative enemata. I gave full instructions for the use of the vapour bath, pointed out the plan of diet already mentioned, and prescribed medicine prepared with the bicarbonate of magnesia and rhubarb, thrice a day.

When I visited my patient again upon the 12th, he was much improved. His father informed me that within twenty-four hours of my former visit, he had assisted his son into the vapour bath ; that the use of it was followed by long sleep, "as sweet and as sound as that of a newborn babe," from which he awoke refreshed ; that immediately afterwards, his bowels were fully acted upon, and had continued in a lax state ever since ; that the daily use of the vapour bath

was followed by four or six hours of sound sleep; and that the quantity of urine passed in the twenty-four hours, was diminished to fifteen pints. Upon examining the skin of my patient, the cuticle was peeling off in huge scales. He was directed to persevere in the plan of treatment pointed out.

June 16th, much improved, urine diminished to twelve pints in the twenty-four hours.

June 22nd, urine diminished to nine pints in the twenty-four hours; and a proportionable increase in strength, and improvement in general health.

June 27th, upon visiting my patient to day, he found himself so much improved that he ventured out in a gig. Urine diminished to eight pints.

July 1st, found my patient improving in health and strength, urine diminished to six pints in the twenty-four hours; and upon his expressing his ardent wish to be in more frequent communication with me, I proposed that he should take lodgings in Hurworth. To this he consented, and sometime between the 1st and the 8th of July he took lodgings at Close's; I think it was upon the 7th that he came to Hurworth; at this time the quantity of urine was reduced to

the healthy standard, had quite lost its diabetic character; my patient appeared more to labour under débility, the consequence of disease, than disease itself; his pulse being good, and the digestive organs performing their functions properly. He was put upon a nutritive diet, allowed the moderate use of wine and porter, &c. Until the 30th of the month he appeared to be doing well, riding out daily, and planning prospects of future happiness and enjoyment. On the 1st of August, I was sent for suddenly; he complained of cold shiverings, difficulty of breathing, dull pain in the chest, and other symptoms indicative of the formation of abscess in the lungs; and on the 3rd of the same month, he died suddenly. An abscess had formed in the lungs, which ruptured into the air cells, and immediate death was the result.

I have previously stated that it appears to be a law in the animal economy; that when disease has continued for a length of time in any part of the body, not immediately necessary for the support of life; that the lungs take on a diseased action, and the patient dies of what is commonly called a "galloping consumption;" and it is wonderful, under such circumstances, to what an extent disease will sometimes take place in the lungs, without one single symptom indicative of its progress.

PULMONARY CONSUMPTION.

THIS disease more cruel than every other, because it wages pitiless war against youth, rather than age ; and from which the physician, on discovering its well-known symptoms, turns away his head in sadness—has long been considered the opprobrium of medicine.

The individuals most liable to be attacked by Pulmonary Consumption, are distinguished by a combination of many of the following marks, sometimes by all of them. Fair thin smooth skin, through which the blood vessels may be seen, blooming cheeks, light soft hair, light eyes with dilated pupils, thick upper lip, narrow chest, elevated shoulders, flaccid muscles, and long weak fingers. Dark hair and dark eyes are occasionally combined with the other signs ; but the skin is always thin and transparent.

The first symptom of the actual approach of Pulmonary Consumption, is usually languor, and inaptitude to exertion, with a slight tickling cough, which is at first not noticed or attributed to cold. To these succeed increase of heat after any meal, occasional chilliness, quick pulse, flushing of the face, dry skin, and heat of the soles of the feet and palms of the hands.

Any kind of rapid motion, or even the act of going leisurely up stairs, occasions some difficulty of breathing, and brings on a sharp transient pain in the chest, commonly called a "stitch." In females, suppression of the menstrual discharge occurs early in the disease, and is often considered, by the patient and her female friends, as her only ailment.

To these symptoms, others more marked soon succeed. The cough becomes distressing, and is attended with expectoration of mixed pus and mucus, often streaked with blood. There is in general a fixed pain either in the side or below the sternum, or a sense of general soreness in the chest. The appetite often continues unimpaired, but the body wastes. Hoarseness, and an uneasy sensation in the throat, are common symptoms; and sometimes early in the disease there is a total loss of voice. A circumscribed red spot appears upon the cheeks, the hair frequently falls off, the sleep is disturbed by frightful dreams, and profuse perspiration, attended with extreme anxiety, occurs towards morning. The urine is scanty, high coloured, and deposits a copious red sediment. The duration of these symptoms vary greatly in different individuals.

In the last stage of this disease, respiration be-

comes exceedingly laborious; the expectoration profuse, and œdematous swellings and diarrhœa commonly precede death. Such is the ordinary progress of this disease, to whose baneful influence, it is calculated that one sixth of those who die in Great Britain, annually fall victims.

Pulmonary Consumption, may, and does frequently occur, as a consequence of external injury, active inflammation, the rupture of a blood vessel in the lungs, or of disease in the abdominal viscera. It occasionally happens that an enlargement of the liver, by encroaching upon the contents of the chest, and thus impeding respiration, is the cause of this disease; and I have sometimes seen a dyspeptic patient labouring under symptoms of incipient consumption. Again, I have frequently met with a patient labouring under every symptom of pulmonary consumption, when, upon accurate examination, the disease was traced to inflammation of the mucus membrane lining the bronchiæ, or passage leading to the lungs; in such cases every unfavourable symptom has been removed, by the application of a few leeches, and a blister to the throat. Pulmonary Consumption also frequently occurs as a termination or sequel to long continued chronic disease, whether such

chronic disease has its seat, either upon the surface, or in the cavities, of the human frame.

It is universally acknowledged, that whatever favours the production of Scrofula, predisposes to Pulmonary Consumption: it therefore becomes an interesting inquiry, what are the vocations which predispose to this disease? and what calling is exempt from its visitation?

All those occupations which oblige the persons engaged in them to breathe a dusty or powdery atmosphere are unfavourable to the consumptive; thus, stone-cutters,* laboratory men, chimney sweepers, dressers of flax and feathers, scythe-grinders,† needle-pointers, pin-makers; all those who follow sedentary and inactive vocations, as tailors, weavers, spinners, carpet-manufacturers, and those employed in silk or cotton factories, are peculiarly liable to this disease. Whilst butchers, tanners, fishermen, stable boys, dragoons, brewers, who are well supplied with animal food, and frequently exposed to all the vicissitudes of

* The stone-cutters employed in the quarries at Gatherly Moor rarely survive their fortieth year,—dying of consumption.

† Scythe-grinders almost invariably die consumptive; they call the disease the “grinders’ rot.”

the weather, are of all classes the least liable to consumption.

It is impossible to pass through a large manufacturing town, without remarking upon the great extent to which the lower class of the population are afflicted with scrofula ; and to what can we attribute this, but to the want of the common necessities and comforts of life, to deficient food, clothing, fire, the want of proper exercise, and the constantly breathing an impure atmosphere.

The allies of scrofula, cold and want, are not confined to the poor ; for the vanity and folly of the opulent, tend to equalize the different classes of society. Mothers are apt to imagine, that, in order to make their children hardy, they must run half naked ; and that to prevent bad humours in the blood, they must be dieted upon vegetables, and regularly physicked ; and that not by the most simple and safe medicines, for *calomel* has been found a very *convenient* purgative for children, and many a fine healthy child has been *dieted* and *calomelized* into eternity. These errors are so common and so fatal, that they cause the higher orders to suffer almost as much as the lower, from deficient warmth, nourishment, and the injudicious use of medicine.

Children ought always to be warmly clad; their diet should be nourishing; they ought to have animal food at least once a day; their exercise should be regular, and increased in proportion as they increase in strength. Particular attention should be paid to the digestive organs; for unless these perform their functions properly, no approximation to robustness of constitution can be expected.

The suckling of children, longer than is consistent with the strength and ability of the mother; or any cause inducing a debilitated state of body, will certainly sow the seeds of consumption: for when the general health becomes impaired, a total change takes place in the secretions of the body;* an *aberration* of nutriment is the consequence, and the formation of tubercles follows.

Hereditary predisposition has, no doubt, very great influence in the propagation of this disease; for it is a curious fact that in all other disorders incident to poor humanity, the desires are dead-

*It is a circumstance worthy of being recorded, that the blood of a consumptive individual differs materially from that of a person in good health; it is very rarely cupped, and its upper surface has a greenish, semi-transparent, gelatinous appearance, interspersed with yellow filaments. My professional engagements have ever prevented me from examining the blood of the consumptive, by chemical analysis.

ened ; but in consumption, even in the last stage, the love of the sex increases with the decay of bodily vigour ; and the malady is thus continued in the future existence of an unborn babe.

Contagion is a frequent cause of this disease ; perhaps much more frequent than is imagined : many cases have fallen under my observation, where the husband has evidently received the disease from sleeping with his wife, the wife from the husband, and the sister from the sister. Neither is this to be wondered at ; for all the secretions being diseased, the perspiration is diseased also ; and being absorbed by the healthy individual, the malady is thus generated. It is true, that anxiety of mind, constant watching, exposure to cold, and that carelessness about self, which every humane mind must feel, when all that is near and dear to us in this world, is lying upon a bed of sickness, will materially assist in sowing the seeds of consumption ; yet still contagion is, in many instances, the original cause of the disease. In Spain and Portugal, the belief, in the contagious nature of Consumption is so general, that the clothes and furniture, of those who die consumptive, are burnt ; and in Spain this custom is enforced by the civil power. It is incidently mentioned by a Spanish author, as an extraordinary

act of charity, that a woman was found to suckle the child of another, who had died consumptive.

I have frequently had children brought to me in a dreadfully emaciated state, and, upon examination, have been unable to detect any bodily disease, which could enable me to assign a cause for such emaciation. Upon enquiry, I have invariably found, that the child slept either with its grandfather or grandmother, an old nurse, or an aged person. Under such circumstances I have merely directed a nutritive diet, and that the child should *sleep alone*; and in every instance the child rapidly recovered. Old people, with the selfishness natural to age, imagine that they prolong their own existence by sleeping with the young; and this is undoubtedly the case; but they do so by (vampyre-like) absorbing the vital principle from the helpless and innocent.* If, then, the aged generate disease in the young by sleeping with them; how much more probable is it that the diseased should communicate disease by pursuing the same course? The sick should invariably sleep alone.

From the preceding survey, it appears that although hereditary predisposition and contagion^{*} are frequent causes of Pulmonary Consumption;

* See notice at the end of the present publication.

yet, whatever tends to produce debility will assuredly generate the disease.

The Dinsdale Sulphur water will be found a valuable auxiliary in the incipient, or first stage of Pulmonary Consumption. I have paid great attention to the effects produced by its use in this disease; and I am of opinion that it is only in the first stage of the malady, that the invalid will derive permanent advantage from its use. When Consumption has made further progress; when the suppurative stage of the tubercles has begun, I have never known the Dinsdale Water of any service; but when the disease has not advanced further than the first stage, I have seen it produce the happiest effects. I have, however, never relied upon the efficacy of the water alone; but upon all occasions employed it in conjunction with various medicines; and I have observed a more decided effect produced by such combination, than when medicine was employed alone. In particular, I have successfully recommended its use in conjunction with the Prussic Acid; and I believe that this, and many other remedies, equally valuable, are laid aside as useless or uncertain by the practitioner, from inattention to their effects, and the proper method and precautions necessary to be observed in administering them.

My own observations have led me to conclude, that the Prussic Acid, and medicines of this class, which act powerfully upon the nervous system, *never* produce any beneficial effect, unless the bowels are previously brought into a proper state. And I believe that the favourable result, arising from the use of this medicine, may be attributed, in a great measure, to its being employed in conjunction with the Dinsdale Water; for, independently of the good effects caused by the use of the water, in daily evacuating the bowels, and thus keeping them in a proper state for the *uninterrupted employment of the medicine*; the alterative and antiphlogistic properties of the water, materially assist in restoring the invalid to health.

Of the use of the warm bath I am inclined to speak very highly, having seen great benefit result from it; in fact, in more than one instance, I am convinced that the judicious use of it, contributed as much to the recovery of the invalid, as any other means employed.

Scrofulous tumours yield readily to the use of the Dinsdale Water; but whether we may reasonably infer that tubercles of the lungs will be equally as readily resolved, is a most difficult point to determine; and I cannot speak positively on the subject. In the following cases, in

which the water, in conjunction with the Prussic acid, was the only internal medicine employed, this effect certainly appeared to be produced ; and, upon the whole, I can with confidence recommend the use of the Dinsdale Water in the *first stage of this disease*, as well worthy of a trial.

Miss —, aged 18, of a florid complexion, fair hair, light blue eyes, long neck, prominent shoulders, and narrow chest, had from her infancy exhibited signs of scrofula, having suffered severely from an enlargement and suppuration of the glands in the neck. She complained of pain in the left side of the chest, with occasional palpitations of the heart, disturbed sleep, shortness of breath, increased upon bodily exertion, flushings in the face in the afternoon ; cough, expectorating a frothy mucus. She had evidently lost flesh, pulse 120, small and weak, bowels irregular, tongue white, and the fauces loaded with mucus ; her spirits were tolerably good, although she had lost a sister in consumption when about the same age. After the application of leeches and a blister to the chest, which was kept open by the use of the savine cerate ; and being prepared by aperient medicine ; she commenced taking the Prussic Acid, in doses of one drop every six hours, drinking, at the same time, one pint of the Spa

Water during the day ; that quantity being found sufficient to keep the bowels in a proper state, and using the warm bath every other day. After she had persevered in this plan for three weeks, (during which time the dose of the Prussic Acid was slowly increased to six drops to a dose) her pulse was reduced to 85, the palpitation of the heart and pain in the chest were nearly gone, (being able to make a full inspiration without much uneasiness) her bowels were regular, her appetite improved, and she slept well. In the course of another fortnight, she was so much improved, that she laid aside the use of medicine altogether, using the Spa Water only; and shortly afterwards she was restored to her friends in perfect health, which she yet continues to enjoy.

This case occurred previously to the first edition of this treatise going to the press; but I purposely delayed publishing it until I was satisfied of the complete recovery of my patient.

Mr. —, aged 22, of a consumptive habit of body, complained of cough, expectorated a frothy mucus; had pain in the chest, which increased upon making a full inspiration; shortness of breath; flushings in the face in an afternoon; burning heat in the palms of the hands and soles of the feet; pulse 130, small and weak; irregular bow-

els ; disturbed sleep, and loss of strength : he had lost two brothers in pulmonary consumption. By adopting a plan of treatment similar to that mentioned in the preceding case, he recovered in the course of six weeks, and continues to enjoy good health.

To record more cases would be but a vain repetition, with very trifling variations of what I have already advanced upon the subject ; I shall therefore proceed to detail a plan of treatment which I have found successful in the suppurative stage of this disease ; being the substance of a paper read before the Medical Society of Darlington, in December, 1832.

In the suppurative stage of Pulmonary Consumption, the physician generally contents himself with prescribing palliative medicines, the removal to a warm climate, &c. ; and the unfortunate patient is allowed to drop calmly and quietly into his grave. But as we sometimes see patients recover, when they are, to all appearance, past hope ; I have ever considered it my first duty to persevere in the use of such remedial agents, as each particular case appeared to call for ; and to hope even against hope itself.

Observing the rapidity with which foul ulcers, not only upon the surface of the body, but even

venereal ulcers in the throat and fauces, became clean and granulated kindly under the use of Beaufoy's Solution of the Chloruret of Soda; I determined to try its efficacy in ulceration of the lungs; for it appeared to me, reasoning from analogy, that if I could possibly saturate the system of a consumptive patient with the Chloruret of Soda; that there was a prospect of bringing about a healthy action in the lungs.

Mrs. —, 33 years of age, tall and well made, light hair, light eyes, pale complexion, the mother of four children; her father, grandfather, and sister died consumptive. Nov. 4, 1830, I found her labouring under inflammation of the lungs; she attributed her illness to want of rest, and cold, occasioned by nursing a sick child during the last month; but she had been in a weak state of health for some time, the menses not having appeared for three months.

I adopted such a plan of treatment as her case appeared to require, but, in spite of all my endeavours, suppuration took place. On the 5th of December, she was expectorating a most offensive curdy matter; on the 6th, it had more the appearance of pus; but the matter expectorated was, if possible, more offensive than ever; hectic fever began to manifest itself; the bowels be-

came lax ; pulse 120 ; tongue fiery red ; and under such circumstances I considered her case a hopeless one.

Dec. 9th, much the same. I commenced this day to give her half a drachm of the Solution of the Chloruret of Soda, every three hours, combined with five drops of tincture of Opium. She was allowed three glasses of Madeira during the day, in addition to a very nutritive diet of Beef-tea, &c.

Dec. 9th, the expectoration was not so offensive ; pulse 110, fuller and softer ; she had slept better, and her cough was not so troublesome.

Dec. 10th, expectorated healthy pus ; the offensive smell was quite gone, breathed easier, and was evidently much improved, pulse 100. To take a drachm of the Solution of Chloruret of Soda every three hours.

Dec. 12th, complained of an intolerable itching upon the neck, chest, arms, and legs ; said she could tear herself to pieces. Upon examination, the extremities were covered with a papular eruption, slightly elevated ; and numerous small abscesses were making their appearance upon the chest ; particularly about the lower part of the sternum ; said that her medicine was too strong, that it heated her ; her tongue was moist and rather

white, pulse 100, her appetite was much improved. The dose of the Chloruret was reduced to half a drachm.

Dec. 13th, the eruption not so much inflamed or elevated; opened a small abscess on the sternum, which discharged about half an ounce of a greenish yellow matter: in other respects, much the same as yesterday. In order to ascertain whether the eruption was produced, or increased by the use of the medicine, I this day, augmented the dose to one drachm.

Dec. 14th, complained of the irritation occasioned by the eruption, which was more elevated and inflamed than yesterday: in every other respect she was much improved.

Dec. 16th, she had a slight attack of Diarrhœa, which yielded to the usual remedies; pulse 95, skin moist, expectoration much diminished, but complained of a slight stitch in the left side, to which a blister was applied; and she was directed to continue her medicine.

Dec. 19th, expectoration very trifling. From this period she continued to improve slowly but steadily. On the 23rd I opened another small abscess upon the chest; and upon passing a probe into the opening, I could not detect any communication with the cavity of the thorax. About

this time the late Dr. Cayley, of Durham, being in the neighbourhood, I related this case to him, and requested him to visit my patient along with me. He did so, and, upon this occasion, expressed himself perfectly satisfied that this woman's life had been saved by the use of the medicine employed; and recommended that she should take two ounces of the *Mistura Ferri Comp.* of the London Pharmacopœa, twice or thrice a day. On the 28th of April the menses appeared, and she was able to look after her family affairs; and, save that she occasionally had a hollow cough, unattended with pain or expectoration, she appeared to enjoy good health.

In the early part of the September following, she was suddenly attacked with a severe fit of coughing, and expectorated a considerable quantity of blood: her spirits immediately sank, she refused all medical aid; and, to my great sorrow, she died in the latter end of the month. Post mortem examination refused.

———, aged 45, had been ill two months; was evidently far advanced in the second stage of Pulmonary Consumption. He expectorated nearly a pint of pus in the 24 hours; was wasted to a skeleton, and apparently could not survive three weeks. He attributed his illness to having

sat in his wet clothes after wading in the river Tees, for three hours, on a winter's night. Under the use of the Chloruret of Soda, the expectoration rapidly diminished, and in four months he was able to follow his employment as a weaver. A remarkable circumstance occurred whilst I attended this man. Under the impression that he could not recover, I considered it my duty to inform him of his dangerous situation. The idea of dying had never entered into his head; when, therefore, he was informed of the probable near approach of the grim enemy, he immediately became insane; and continued in this state for three days; during which time, his cough vanished, and expectoration ceased. He is now living in good health.

— Stephenson, aged 18, expectorated from 12 to 14 ounces of pus, in the 24 hours, and laboured under the symptoms attendant upon the suppurative stage of Pulmonary Consumption; he recovered under the use of the Chloruret of Soda, in three months.

Ann Wood, aged 23, (who had lost two sisters in Pulmonary Consumption) was labouring under the disease, and which had advanced as far as the suppurative stage; but recovered under the use of the Chloruret of Soda.

Peter Chrystelow ; Dalton, aged 31, consulted me, March 3rd, 1834. He had been ill for three months, and was in the suppurative stage of Pulmonary Consumption. This young man recovered rapidly, under the use of the Chloruret of Soda ; and discontinued his visits to me, on the 15th of April, last. He continues to enjoy good health ; and is at this time, August, 1834, engaged in the labours of the harvest.

Pulmonary Consumption, in many instances, appears to be arrested in its progress by pregnancy ; but after delivery, the disease hastens to a rapid termination. Under such circumstances, I never knew but one individual recover.

Elizabeth Goldsbro, wife of Frank Goldsbro, bricklayer, Hurworth, aged 31, light hair, light eyes, fair, thin, smooth skin, and delicate make, sent for me, June 2nd, 1834 ; upon which day I delivered her of a seven months child ; which died on the 4th, being her eighth child. Previous to her becoming pregnant, she laboured under a severe cough and expectoration ; which symptoms disappeared when she became *enciente* ; although her body gradually wasted, so that, at the time of her confinement, she was little more than a mere skeleton. Within twenty-four hours after her delivery, her cough, expectoration, and

hectic fever returned with increased violence. After administering a purgative, composed of calomel and opium, I prescribed the Solution of Chloruret of Soda, in combination with Tincture of Opium, as related in the first case. Under the use of this medicine, combined with a nutritive plan of diet, &c., on the 28th of June the expectoration had entirely ceased; and up to the present date, August 30th, she has continued rapidly to improve in health and strength.

The effects which usually follow the internal use of the Chloruret of Soda, in the suppurative stage of Pulmonary Consumption, are, an increased appetite; the expectoration of healthy pus, gradually diminishing in quantity, and becoming more viscid; the disappearance of hectic fever; the pulse becoming fuller, softer, and less frequent. Occasionally a degree of irritation is produced upon the surface of the body, sometimes ending in the formation of small abscesses, particularly upon the chest; and occasionally terminating in an eruption of a peculiar character, resembling measles.

This I have ever considered a favourable symptom, proving that the system is completely under the influence of the medicine; whilst the counter irritation, produced by its action, has

evidently relieved the disease in the chest.

I cannot say that in every instance this medicine has proved successful, far from it; but it certainly has proved more successful than any other medicine which I have administered, or which I have had any opportunity of witnessing, and of watching the effect. In conclusion, I can only state that, by means of this agent, I have succeeded in saving nearly three cases out of nine.

In all painful affections of the limbs, as the remains of RHEUMATISM, PALSY, or GOUT, this water is of infinite service; in many cases restoring the limbs to their wonted vigour, after every other means has failed in doing so.

In RHEUMATISM, particularly in the chronic form of the disease, the Dinsdale Water possesses a high and well-merited reputation. It must not, however, be considered an *universal remedy* in this disease; chronic rheumatism appears in such a variety of forms, and is so modified by the constitution of the invalid, that cases will occur in which the water is but of little service; except in improving the general health of the individual.

It not unfrequently happens, when the complaint has continued for a length of time, that a disease of structure occurs in the inflamed parts; the bursæ mucosæ become distended and tender;

the tendons rigid and thickened; and from the disorganised condition of the ligaments; and perhaps from the absorption of the smooth surfaces of the cartilages being attended with adhesive inflammation; a partial or complete ankylosis of the joint often takes place. When such is the case, it is clear that *no remedy* will be of any avail; but it is equally evident that such effects may always be prevented by *timely attention*.

The water will be found most useful in those cases in which there is but little tendency to febrile irritation; and in which the inflammatory diathesis is absent. In such cases, the patient is generally free from pain, when warm in bed, or when sitting at rest: He suffers only upon moving: then the joints feel stiff and painful, and produce a harsh grating or crackling noise; this grating is, in all probability, occasioned by the comparatively dry state of the cartilaginous surfaces; and caused by a defective secretion from the synovial membranes.

When much febrile irritation exists, and there is a degree of inflammation in the affected joints; it will be prudent that this condition be removed previous to using the bath; though such state does not militate against the internal use of the

water. When this febrile state of the system is removed, the use of the bath will materially forward recovery ; in fact, it may be considered the principle agent in the cure. (Vide remarks on cold bathing.)

The cold bath, however, ought never to be used when there is the least tendency to internal disease ; and particularly in those cases where rheumatism has at any time affected the diaphragm, or muscles of the chest ; or when the constitution is much enfeebled by the action of the disease : in such cases, the warm bath is to be preferred.

The usual attention must be paid to the state of the alimentary canal ; and when once the bowels are brought into a proper state, the water must be taken as an alterative.

A poor labouring man had been afflicted with flying rheumatic pains, for nine months, principally affecting the feet and knees ; his pulse was natural ; and the pains were not increased by the warmth of his bed. I gave him some aperient medicine ; after the operation of which, I directed him to drink the Spa Water, and make use of the cold bath twice or thrice a week : by persevering in the use of it for a fortnight, his pains were completely removed. He said that he de-

rived most benefit from the use of the first bath ; the reaction was very great ; and in the night he perspired profusely.

C. A. aged 21, had suffered from rheumatism in the chronic form, for thirteen months ; he complained of lameness, stiffness, and irregular pains in the feet, which pains were much increased in a moist state of the atmosphere ; there was a slight redness and tenderness about the ankle joint of the right foot ; the left was not so severely affected ; the bowels were costive, the skin dry, the pulse quick and irritable, and he complained of thirst. I first directed my attention to the removal of the febrile symptoms, by the use of purgatives, the application of leeches to the inflamed parts, &c. Having succeeded in this point, as his bowels were naturally sluggish, I gave him some aperient pills to take every other night, in conjunction with the water ; and directed him to use the cold bath. In the course of three weeks, his pains were completely removed ; and he remarked to me “ that the first use of the bath caused him to perspire freely ; and his skin had continued moist ever since.”

T. R. consulted me in 1826 ; had been afflicted with chronic rheumatism, at intervals, for the last three years ; affecting, principally, the

feet, and muscles of the back; the feet were much swollen, and the pains increased by the warmth of his bed; the bowels costive, the skin dry and harsh, the pulse quick, and he complained of thirst. I directed the use of some aperient pills every night, and desired him to drink freely of the Spa Water. In the course of a week, he was much improved; his bowels had become regular, his skin moist, and his pulse natural; he was able to obtain some sleep, in consequence of the pains not being troublesome when warm in bed; but there still remained a stiffness in the back, and lameness in the feet, which continued swollen. I now wished him to use the cold bath, but he was afraid to do so; and it required some persuasion on my part, before he would consent. He, however, derived so much benefit from the use of the first bath, that I had no difficulty in persuading him to persevere in its use; and, in one month from the time he first employed it, he informed me, to use his own words, "that he had not felt himself so well, or so comfortable, since he was a school-boy."

PALSY is always preceded by an attack of Apoplexy, more or less severe; although sometimes so trifling as to escape the notice of the

individual altogether, until, upon making an attempt at motion, he finds he has lost the power of doing so; at other times he falls from his position insensible; and some time elapses before he is sufficiently collected to ascertain the nature of his disease.

In paralytic cases, the water acts principally by improving the general health of the invalid; by removing that sluggish state of the bowels, which so frequently attends the disease; and restoring the stomach to its proper tone.

The well-known sympathy which exists between the brain and the stomach, having a great influence over this disease, renders attention to the state of the alimentary canal highly necessary. The patient, therefore, cannot pay too great attention to his bowels; never allowing constipation, if possible, to take place; or a lax state of them to continue; the first case will cause a determination of blood to the head; and the latter, by weakening the digestive organs, retard the cure.

If, during a course of this water, the bowels should become constipated, (a circumstance, however, of very rare occurrence,) the paralytic patient will find benefit from the addition of Epsom Salt to the water. Should the lax state

occur, the use of *astringents* will not be proper ; a combination of the mercurial with the compound rhubarb pill, is the best remedy ; and when once the intestinal function is restored, the water should be taken as an alterative.

The warm bath ought to be used every second or third day ; and when the individual is liable to head aches, I have seen very great benefit from bathing the head with cold water, during immersion in the warm bath.

About ten years ago, I was called to visit a patient, who had been deprived of the use of his lower extremities in a gradual manner ; three months previous to my seeing him, he complained of a numbness, and occasional want of power, which had gradually increased ; and, at the time I was consulted, he had entirely lost the use of them. Upon a most careful examination, I could not detect any disease in the spine. I gave him some active purgative, which brought away a very small quantity of dry and hardened fæces ; the cause of the disease was now evident ; an enema was administered ; an incredible quantity of dry, hardened, and offensive matter was brought away ; and he immediately recovered the use of his limbs. In this instance, the disease was occasioned by the hardened contents, in

the lower part of the bowels, pressing upon the large nerves supplying the lower extremities; and thus paralysing them. Since that time, I have met with other cases of a similar description; and I merely mention the fact, as a proof of the necessity which exists of a proper attention to the state of the alimentary canal, in every instance; but more particularly in cases of Palsy.

In those cases of GOUT, which have come under my observation, I have noticed that, after the invalid has taken the water for a short time, he generally suffers a paroxysm.* Under such circumstances, it will be advisable to abstain from the use of the water, until the *active symptoms* of the disease have subsided; treating the disease, in the meantime, in the usual manner; and, when the active symptoms have ceased, the use of the waters may be resumed, not only without fear of it causing a return, but also with advantage; for I believe that a fit of the Gout, produced, or excited into action, by the Dinsdale Water, will not soon be followed by another.

I do not know any form of disease in which more care is necessary in the exhibition of this

* This happens very frequently, with most mineral waters; the use of the water is then suspended, and gentle aperients employed until the paroxysm has subsided.

water, than in Gout. As a general rule, it ought never to be employed, either externally or internally; when the system is in so irritable a state, that a slight excitement will bring on gouty action; such cases, however, must be excepted, in which the constitutional derangement is so great, that a fit of the gout is a desirable object.

The Dinsdale Water is of the greatest service in that form of the disease, when the parts which have suffered from gouty action, are simply in a stiff and weakened state; when there is a freedom from inflammatory action, and feverish state of the system.

In all these affections of the limbs, the invalid should not fail to add, to the other remedies employed, the important point of diligent friction upon the affected parts.

In the diseases incident to the fair sex, as CHLOROSIS, AMENORRHŒA, MÆNORRHAGIA, FLUOR ALBUS, &c., the Dinsdale Water is of infinite service; and when no disease of the uterine organs exists, it may be used with safety and advantage.

CHLOROSIS occasionally depends upon general debility, but is more frequently caused by a disordered state of the digestive organs; witness the singularly depraved appetite, the flatulency

and acidity in the stomach and bowels, and the obstinate constipation usually attendant upon these symptoms; thus precluding a sufficient supply of nourishment, at a time when it is most wanted.

In such cases, a due preparation, previous to using the water, must be attended to; otherwise but little benefit will be derived from its use. The warm bath contributes greatly in removing the languid state of the circulation, and obstruction of the natural evacuations; and when once a favourable change has been effected by its use, the progress towards recovery is astonishingly rapid. When the individual is convalescent, great benefit will be derived from the use of the cold shower bath, with a tonic plan of treatment.

When the disease arises from general weakness of the system, the water should be taken as an alterative; and it will be advisable to use the warm bath, or warm shower bath, two or three times, each time gradually lowering its temperature; as a preparation, previous to using the cold shower bath. A generous diet, with the moderate use of good wine; combined with gentle exercise, particularly on horseback; and the use of some mild tonic, will materially forward the recovery of the invalid.

June 14th, 1825. M. B., aged 19, complained of palpitation of the heart, pains in the back and loins, costive state of bowels, flatulency, loss of appetite, and debility; she had a short dry cough; the pulse small and quick, the lips pale and bloodless, and the eyes encircled with a livid mark; the menses were deficient in quantity, and sometimes altogether retained. I directed the use of an aperient pill every night, in conjunction with the water; and the use of the warm bath every other day.

June 22. The palpitation of the heart was considerably relieved, the dry cough was nearly gone, her spirits and appetite improved, the evacuations from the bowels were more healthy and regular. I directed her to take one ounce of the *Mistura Ferri Composita* thrice a day, and to continue the use of the pills, &c., as before. She continued improving rapidly, and on the 6th of July, the menses appeared. She now laid aside the use of medicine altogether, and made use of the cold shower bath, every second or third day, for a fortnight; at the expiration of which time, she was restored to perfect health.

A young lady, aged 20, consulted me in August, 1827; had been ill five years, and for the last eight months had been altogether confined

to her bed. It appeared that her illness was first produced by sleeping in a damp bed, at a time when she ought to have been particularly careful of herself. In consequence of which she had suffered severely from violent attacks of spasm in the stomach and bowels, alternating with an affection of the nerves of the face, (*Tic Doloureux.*) When she consulted me, I found her dreadfully emaciated, complaining of violent pain in the stomach, which was always increased upon taking food; she had frequent attacks of vomiting; the matter rejected resembling mucus, and the evacuations from the bowels being of the same character; the menses irregular, and sometimes altogether retained; pulse 130; dry skin; she passed sleepless nights; was weak as cradled infancy; and laboured under great depression of spirits. By drinking the water as an alterative, and *using the warm bath daily*, in the course of three weeks she was able to leave her room; her pulse was reduced to 84, and her nights were more comfortable. At the expiration of five weeks, she was able to ride out on horseback daily, for two hours; her appetite improved; she slept well; and, in the latter end of October, she returned home quite well; if we except a degree of debility, the natural consequence of such a long illness.

MÆNORRHÆGIA not unfrequently arises from a plethoric state of the system; when such is the case, the invalid ought (in addition to the usual preparation necessary, previous to using the water) to lose a little blood from the arm, proportioned to the violence of the disease. The water should be taken so as to act rather smartly upon the bowels; and when the violence of the disease has subsided, it may be taken as an alterative; the shower bath being used at the same time, as recommended in page 90.

If, on the contrary, the disease originates in debility of the system, a different plan of treatment must be pursued. In such cases, advantage will be obtained from the use of some mild tonic, in conjunction with the water, which must be taken as an alterative, rather than as an active aperient.

I never yet met with a case of FLUOR ALBUS, which was not accompanied with a greater or less impaired state of the digestive organs; and I never yet met with a case, which did not yield to a course of the Dinsdale Water; even when the disease had been of many years standing.

The warm bath is not admissible in every case of Fluor Albus; on the contrary, I have frequently known it aggravate the disease; it ought

therefore to be used with caution ; or, if used at all, the warm shower bath, as a preparation for the cold shower bath, is to be preferred.

Mrs. T., aged 30, complained of pain in the stomach, loss of appetite, costiveness, debility, and fluor albus. I directed the use of some aperient pills, previous to taking the water, and the use of the cold shower bath. In a fortnight, her health had materially improved, her appetite returned, and the bowels had become regular, but the most *unpleasant symptom* still remained ; this also was removed in a very short time, by using the water as a lotion thrice a day. I have seen her twice since, and she has never had any return of her complaint.

A lady, aged 35, who had been married two years ; in the first year of her marriage, was delivered of a dead child, after a tedious labour ; her recovery was slow, and from that time she frequently laboured under an affection of the stomach, accompanied by that distressing complaint, fluor albus. I recommended a plan of treatment similar to that in the last case ; and, in the course of six weeks, she was restored to perfect health.

It is impossible for me, in this place, to point out all the different plans of treatment which

may be called for, in all the various cases of female weakness; I shall therefore content myself with observing, that, in *every case*, a course of this water, properly managed, will be found of great service, particularly by females at a certain period of life; in which cases I am convinced, from personal observation, that more benefit will be derived, than from the use of any other single remedy.

In affections of the rectum, but particularly in cases of PILES and FISTULA IN ANO, this water is a most useful remedy.

The individual afflicted with piles will be sure to derive benefit from the use of the water; this disease is frequently occasioned by the use, or rather abuse, of aloetic purgatives; or by allowing the bowels to remain in a constipated state. It is by no means a dangerous disease; but it is always troublesome, and sometimes excessively painful.

The excellent quality which the Dinsdale Water possesses, of keeping the bowels in a proper state, not only during a course of it, but for some time also after it has been discontinued; renders it a powerful remedy in these cases. The advantages of sulphur, as a mild unirritating purgative, and one which seems to continue its

operation through the whole of the intestinal canal, has long established its efficacy in those hæmorrhoidal affections, which require this evacuation. In these cases, the water should never be taken in such excess, as to occasion unpleasant sensations.

IN FISTULA IN ANO, this water is of great service; one case which came under my care was completely cured by the use of it alone. It must not, however, be considered a certain remedy in this disease; the case alluded to is the only one which has come under my observation, in which the complaint was removed by the action of the water alone. Other individuals have certainly derived great benefit from the use of it, by the general improvement of their health; but, as I have previously stated, it cannot be considered a certain remedy, when employed alone. At the same time, it is well worthy of a trial; for when it does not succeed in removing the disease, it will enable the invalid to recover from the effects of an operation, much sooner than would otherwise be the case.

C. F., aged 41, a shoemaker by trade, laboured under fistula in ano; upon examination, I found that the sinus did not extend further up the gut than one inch; and recommended an operation

for its removal, to which he would not consent. I had but little hope that the Dinsdale Water would produce any beneficial effect; but, as he seemed anxious to try its efficacy, I desired him not to drink more of it than was necessary for the producing one healthy evacuation daily; directed him to wash the part frequently with the water, and to use the warm bath. At the expiration of a fortnight, he called upon me, when the parts looked more healthy, discharging good pus. Finding things going on so favourably, he determined to persevere; and, at the expiration of a month, from his first commencing the use of the Dinsdale Water, he again called upon me; when the sinus was nearly healed; in fact, it had become so trifling as hardly to deserve notice; he is now quite well.

The water may be used with advantage in cases of WORMS, particularly ASCARIDES, which usually inhabit the lower part of the intestinal canal; and are so troublesome, not only to children, but occasionally also to the adult. Used in the form of a clyster, it is a certain remedy.

A. F. brought her child to me, on account of a disordered state of the bowels; I found the belly hard and tumid, the stools slimy, the breath fetid, the skin dry, with a quick pulse. I sus-

pected that the child was troubled with worms; and directed the use of some aperient medicine, which brought away a number of ascarides, commonly called thread worms. I now determined to try the efficacy of the Dinsdale Water as a vermifuge; and that I might not be disappointed or deceived; I stood by whilst a clyster of the water, made new milk warm, was administered to the child: it proved most efficacious, nearly half a pint of ascarides being voided along with it; the child rapidly recovered.

Independently of the excellent qualities possessed by the Dinsdale Water, in common with other sulphureous waters; it acts powerfully upon the skin, through the numerous pores of which it operates with great activity; the body acquiring the smell of sulphur; and silver and gold worn about the person, becoming tarnished; hence its great utility in many affections of the surface.

Many diseases of the skin depend upon a disordered state of the stomach, and first passages; others, upon want of personal cleanliness: some are produced by contagion; and some are hereditary: but all are aggravated by irregularities in living, and a disordered state of the digestive organs.

That a disordered state of the digestive organs is frequently the cause of diseases of the skin, no one will doubt. Some kinds of food, when taken into the stomach, or improper mixtures of food, will frequently produce an eruption upon the surface of the body.* Dr. Willan is of opinion, that a disorder of the skin, thus produced, is liable to become confirmed and habitual, by the repetition of such diet. Nor does it seem unreasonable, that an acrimony in the blood, produced by improper diet, or bad digestion; should more particularly affect the vessels of the skin, whose sensibility is greatest; and whose minute ramifications expose them to closer contact with any morbid matter passing through.

In this age of luxury and refinement, the bath is rarely used, unless ordered by the physician, for the recovery of health; hence the perspirable matter perpetually exhaling, is suffered to condense on the surface of the body; it accumulates, hardens, forms a crust upon the skin, and, stopping the pores, forbids an exit to that fluid, which nature designed to throw off. This, therefore, stagnates, turns acrimonious, stimu-

* Sir G. Tuthill, in his *Lectures on the Practice of Physic*, mentions the case of a lady, who could not eat a single strawberry, without being covered with a rash, resembling Scarlatina.

lates the extreme vessels, raises the cuticle in pustules, &c.; and thus some hereditary disease of the skin is excited into action, which might otherwise have lain dormant; or a disease of a contagious nature, as the Itch, is generated.

The disease, once formed, is apt to become confirmed; and to attempt the removal of it by the external application of mercurials, or astringents, is difficult and dangerous; for it seems to be a law in the animal economy, that the sudden suppression of one action, occasions another sympathetic action in some other part of the system. In other words, a superficial inflammation, suddenly repelled; is frequently succeeded by an inflammatory action in some of the viscera, disorder of the stomach, asthma, &c.

In other affections of the cuticle, of a more violent degree, as *Lepra*; this water is particularly useful. This form of disease is more frequently hereditary, than excited into action by other causes. Some poisonous substances, introduced into the stomach, have produced an eruption of *Lepra*. The poison of copper is stated to have speedily excited it in several persons at the same time.* Dr. Bateman mentions cases, in which

* See Medical Facts and Observations, Vol. 3, p. 61.

spices and alcohol, received into the stomach, was followed by a leprous eruption. Dr. Willan imputed the origin of this disease to cold and moisture, and to certain dry sordes on the skin ; but these are no general causes of the disease ; as it frequently makes its appearance upon individuals in respectable ranks of life, by whom every attention to cleanliness is scrupulously regarded.

There are two forms of this disease : the *Lepra vulgaris* and *Lepra alphoides*. **LEPRA VULGARIS** most commonly commences in the extremities, where the bones lie nearest to the surface ; especially below the elbow and the knee ; and usually on both arms, or both legs, at the same time. From these parts it gradually extends, by the formation of new and distinct patches, along the arms or thighs, to the breast and shoulders ; and to the loins and sides of the abdomen. The hands also become affected, and in many cases the hairy scalp ; but the face is seldom the seat of large patches, although some scaliness occasionally appears about the outer angles of the eyes, and on the forehead and temples, extending from the roots of the hair. In more severe cases, the nails of the fingers and toes are much thickened, become opaque, and

of a dirty, yellowish hue; are incurvated at their extremities, and their surface irregular, from deep longitudinal furrows, or elevated ridges.

LEPRA ALPHOIDES differs chiefly in the smaller size of the patches, seldom extending beyond the diameter of a few lines; rarely confluent, or running into each other; the scales are much whiter, and more minute; it is limited to the extremities; and is most common in children.

Mineral waters, strongly impregnated with sulphuretted hydrogen, independently of their other qualities, when used as a bath, are powerfully stimulant to the surface; and hence the use of the warm sulphur bath not only removes the scaly matter, which is continually secreting in leprous cases, but also stimulates the cutaneous vessels to a more healthy action; whilst the internal use of the water materially assists, by its alterative power, in restoring the secretions to a healthy state. I have seen several cases of this loathsome disease, evidently hereditary, yield to the use of this water; after the individuals had in vain sought relief from other remedies.

The Dinsdale warm bath is a most powerful remedy in both forms of this disease; and ought, on no account, to be neglected; it should be used

every day, or at least every other day ; employing diligent friction to the affected parts, during the time of immersion ; which ought to be continued for twenty minutes or half an hour, if the patient is able to support immersion for that length of time. The water must be taken as an alterative ; the diet light and moderate ; malt liquors and spirits must be avoided ; as every indulgence on those points, will not fail to aggravate the disease.

A gentleman in this neighbourhood asked my advice under the following circumstances :— About six months previous to consulting me, he observed a number of small red spots to break out, upon his knees and elbows ; which gradually extended along the thighs and arms, becoming covered in their progress with white scales.— Upon examining the parts, I found that at the point where the disease first commenced, they had formed thick crusts, not unlike the scales of a fish, which were easily removed ; and underneath the skin appeared smooth, red, and shining ; I also observed one or two patches upon the scalp and forehead. He informed me that the disease had proceeded very gradually, and had not become very troublesome, until within the last month ; when the quantity of scaly matter every day separated, increasing ; and the itching, when

warm in bed, or heated, becoming intolerable, he became alarmed. This was evidently a case of *Lepra*; I directed the use of some aperient medicine, in conjunction with the *Dinsdale Water*, and the use of the warm bath every other day; desiring him to remain in it half an hour, or longer, if he could bear it; and to use diligent friction with the flesh brush, during the time of immersion. He pursued this plan for a fortnight, when I again examined him; I found him much improved, and he informed me, to use his own words, “that the complaint was now bearable;” at the expiration of another fortnight, every unpleasant symptom had nearly vanished; the eruption being confined to the parts where it originally commenced; this also gradually died away, and he has never had any return of the disease.

The *Dinsdale Water* has been found of great service in the different forms of that disease of the skin, called *ECZEMA*; but particularly in that variety of the complaint which arises from the irritation of mercury.

In the *ITCH*, in every stage of the disease, it is a certain remedy; and, in every instance, is to be preferred to the unpleasant process of smearing the body with sulphureous ointment. In

very bad cases, the cure will be accelerated by the addition of one ounce of the sulphuretted kali to each bath; but such addition is not necessary to effect that purpose.

The water will be found of service in all those eruptions arising from a disordered state of the digestive organs, as blotched face, &c.; and many other affections of the skin, usually called scorbutic.

Several individuals have informed me, that they had laboured under an affection of the skin, upon the neck, chest, and belly, for years; having the appearance of brown or copper coloured blotches; known to professional men as the *PITYRIASIS VERSICOLOR*, of Willan; which gradually disappeared, as the disordered state of the digestive organs was removed by the use of the water.

It is not uncommon for the invalid, suffering from internal disease, not only to get rid of the internal complaint; but, to his surprise, find sores upon the lower extremities, which had been long troublesome and painful, completely cured also. And I am convinced that many ulcers would heal, which are considered incurable; if, in addition to the external applications employed, some medicine was taken internally, so as to

improve the habit of body of the invalid; and I have no doubt but that it is in this manner that the Dinsdale Water produces such unexpected and happy effects.

Upon the whole, the Dinsdale Water is an agent of decided power and efficacy, not only in the diseases mentioned in the preceding pages, but in many others also. It is a powerful auxiliary in all cases of fever; quenching the thirst sooner than common water; and materially assisting the operation of purgative medicine. It is also of service in many affections of the urinary organs, but particularly in Diabetes.

Mineral waters have long been considered powerful remedies, in many cases of disease; but the Dinsdale Sulphur Water possesses very superior claims upon the attention of the public. Its efficacy is doubtless much increased by drinking the water at the fountain; where the patient's mind, being constantly engaged by the company, agreeable prospects, and the advantages of pure air and exercise, he is sure to receive both hope and entertainment; which, in many cases, certainly coincide with the general curative effect of the spring itself. Besides which, there is a confidence in natural remedies in the human mind, which gives to mineral

waters a medical character, not to be attained by the substitutions of art; thus rendering them objects of general interest. "I am persuaded," writes the celebrated Lady Mary Wortley Montague, "Mineral Waters, which are provided by nature, are the best, perhaps the only real remedies."

The Dinsdale Spa may, under certain circumstances of disease, be visited at all times; but the best seasons for deriving advantage from its use, are the summer and autumn; when the benefits of air and exercise may be combined with the use of the water; which, at these periods of the year, is in the best possible state to remove those affections, for which it is employed.

The diet of the invalid should be moderate in quantity, and plain in quality: for what benefit can possibly be derived from a course of alterative aperient water, if a system of repletion with a variety of stimulating food be every day pursued?

It is a good rule to eat only of one dish at the same meal; and, with regard to dessert, the least quantity is the best; as, during a course of this water, fruit is apt to disorder the bowels, and should therefore be avoided. The quantity of fluid taken at meals should be moderate; soups

should be abstained from, as also ought pickles and salads; spinage, as being a vegetable which readily ferments; and any other vegetable not in season.

A moderate use of good wine, as Madeira or Sherry, may be allowed; but should these disagree with the invalid, and become acid upon the stomach; weak brandy and water may be substituted for ordinary drink.

In that necessary part of regimen—regular daily exercise, the patient should be careful to avoid exposure, and all active exertion, during the heat of the day; and preserve the powers of his constitution, by every care and attention, in order to do full justice to a course of the water.

ANALYSIS

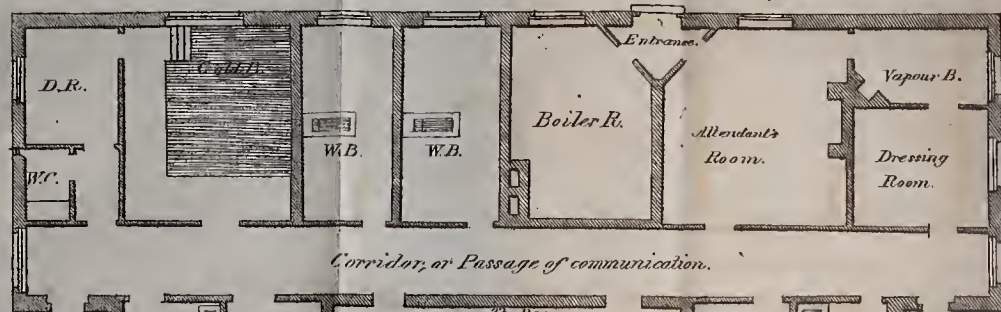
OF THE

CROFT WATERS,

&c. &c.



A ground PLAN and ELEVATION of the Baths now erecting over the New Sulphur Well at CROFT, Aug. 1826.



The S.E. & N.E. warm Baths have each a shower bath over them. The Dressing Rooms are all warmed by Steam.

W.B.

D.R.

Warm Bath & Dress Room

The Pump Room, 30 feet by 17.

EAST SIDE.

W.B. &

D.R.

W.B.

D.R.



Dimensions of one of the Baths.

Scale. — 14 feet to an Inch, or 1/4 of an Inch to a Foot.

THE ELEVATION FACING THE EAST.

A A The Verandah or covered Walk.



ANALYSIS, &c.
OF THE
CROFT WATERS.

HISTORY AND SITUATION.

CROFT Spa is situated within the borders of Yorkshire, and on the confines of the bishopric of Durham; four miles distant from the market town of Darlington, ten from Richmond, twelve from Northallerton, thirteen from Stockton, and four from the Dinsdale Spa.

It appears, from some old MSS. in the possession of Sir William Chaytor, Bart., of Witton Castle, upon whose property the Spa is situated, that the old well was first brought into notice by his grandfather, Sir William Chaytor, Bart., in the year 1668-9. The spring rising to the day in a rich piece of ground, was called

the “Stinking Pits,” from the strong sulphureous smell of the water; and being a copious spring, and no care taken of it, the ground around it became boggy, and rendered the collecting of the water a difficult task; but, in the year 1668-9, in consequence of some remarkable cures performed by drinking the water, Sir William caused a bath, &c. to be erected; and from this period devoted much of his time and attention to the Spa; carefully noting down any particular cure, &c.

In the year 1692, in consequence of the numerous sick who flocked to the spring, he was under the necessity of forming rules to be observed by the visitors; and so early as 1713, the water had acquired such fame, that it was sold in London, sealed up in bottles, at an exorbitant price; and much company resorted to the Spa, from different parts of the kingdom. But, as more suitable accommodations were made at other places, it became in some measure forsaken from the want of equal conveniences; and its advantages principally confined to the inhabitants of the surrounding country, until in the year 1808; when the present proprietor erected a capacious hotel, with suitable conveniences, and a number of comfortable lodging-houses,

A sepia-toned photograph of a large, multi-story building, likely a government or institutional structure, viewed from a distance. The building is partially obscured by a large, leafy tree in the foreground. The sky is hazy or overcast.



for the accommodation of the visitors.

Whilst I was engaged in analysing the Old Well Water, in 1826; Sir William Chaytor, Bart., placed in my hands the manuscripts of his grandfather, relating to this mineral spring. Upon carefully perusing them, I found that in the year 1681 he had discovered a mineral spring, by boring through the rock, about 150 yards to the north-west of the present old well; and I mentioned the fact to Sir William Chaytor. We could not, however, discover any trace of this spring in the situation pointed out; although some of the old inhabitants of Croft had a recollection of the same, and assisted in the search. Under such circumstances, Sir William Chaytor determined to bore through the rock; and, after much labour, in August, 1827, he succeeded in discovering a most valuable sulphur spring at a depth of twenty-six fathoms from the surface, now known by the name of the "New Well."

The following is the account of the borings, as furnished to me by the engineer:—

	Fathoms.
Gravel and Clay	2
Red Sandstone	12
Very hard White Sandstone	2
Hard thin beds of flinty Chert, with soft Partings	10

In a strata of Plate, the first the workmen met with, at a depth of twenty-six fathoms, the Spring burst forth.

Over this spring a splendid suite of Baths have been erected by the worthy Baronet; and which were thrown open to the public in 1829.

There is another mineral spring at Croft, which rises to the day in the middle of a brook, called "Croft Well Beck," and which is generally known by the name of the "Canny Well." In its medicinal properties and contents, it resembles the old spring; but my professional engagements have hitherto prevented me stating its contents with any degree of accuracy.

The air of Croft is remarkably pure. The surrounding country is pleasant, and the different views on the banks of the Tees are delightful; commanding a prospect over an extensive tract of country, in the highest possible state of cultivation.

ANALYSIS OF THE OLD SPA, AT CROFT.

The water is beautifully transparent, and sparkles when poured into a glass; it has a slight smell of sulphuretted hydrogen gas; and, so far from being nauseous, is agreeable to the palate. The flow is very copious, amounting to about three hundred gallons per hour. Its temperature is uniformly $51^{\circ}\frac{1}{2}$.

ACTION OF TESTS.

1. Superacetate of Lead; a precipitate, of a dirty white colour.

2. A piece of silver was placed so as to allow the water from the spring to fall upon it; in the course of two minutes it was tarnished.

3. Lime water; a copious white precipitate; soluble with effervescence in muriatic acid.

4. Muriat of Barytes; a dense white precipitate.

5. Nitrate of Silver; a precipitate of a dirty white colour. With the boiled water, the precipitate is perfectly white.

6. Pure Ammonia; a light cloud.

7. A solution of Carbonate of Ammonia was added in slight excess to the water, which rendered it milky; it was then filtered, and a solution of Phospate of Soda added to the filtered liquor; a white precipitate, of a granular appearance, was deposited upon the bottom and side of the glass.

8. Hydrosulphuret of Strontian; a copious white precipitate.

9. Oxalic Acid; a moderate white precipitate.

10. Oxalat of Ammonia; a dense white precipitate.

11. Syrup of Violets was turned green.

12. Tincture of Galls; no immediate change: but, on standing twenty-four hours, the water became of a dark grass green colour, with a shining pellicle upon its surface.

13. Prussiat of Potash; no immediate change: but, at the expiration of twenty-four hours, a light blue colour was evident.

EXAMINATION OF THE GASEOUS CONTENTS.

A. A Flask, which contained exactly seven ounces, was filled with the water, and gradually

heated by means of a spirit lamp; and the gas received over warm water into a graduated jar; the boiling temperature being continued until no more gas came over. In this manner, the corrections for pressure and temperature being first duly made, 1.05 cubic inches of gas was obtained.

B. The gas obtained in the last experiment, was submitted to the action of a solution of lead in excess of acid, which reduced its volume to $\cdot 95$ of a cubic inch.

C. Lime water, employed in a similar manner, reduced its bulk still further to $\cdot 2$ of a cubic inch.

D. The remaining $\cdot 2$ was found to consist entirely of azote; as it was neither combustible itself, nor capable of supporting combustion.

E. Eight ounces of the water were made to boil, for fifteen minutes, in a glass flask, luted to a receiver; into which a quantity of lime water had previously been introduced. In this manner, a quantity of carbonate of lime was obtained; which, when dried, weighed 1.7 gr.; which is equivalent to $\cdot 85$ of a cubic inch of carbonic acid gas, in half a pint of the water; or 13.6 cubic inches in one gallon.

F. Now experiment C. gives $\cdot 75$ of a cubic inch of the same gas in seven ounces of the

water; or 13·71 cubic inches in one gallon. The gaseous contents may therefore be fairly stated as follow :

Gaseous Contents in one Gallon.	Cubic Inches.
Carbonic Acid Gas	13·65
Sulphuretted Hydrogen	1·82
Azote	3·65
	<hr/> 19·12 <hr/>

EXAMINATION OF THE SOLID CONTENTS.

A. Sixteen ounces of the water slowly evaporated, yielded twenty grains of solid matter, dried at the usual temperature.

B. In order to separate the muriates contained in this product, it was digested in alcohol for forty-eight hours.

C. This alcoholic solution, when evaporated to dryness, gave a small portion of solid matter, weighing 1·2 gr., which deliquesced considerably, upon exposure to the air, and became all dissolved.

D. This deliquesced mass, when dissolved in distilled water, was found to consist entirely of muriat of lime.

E. The saline residue, insoluble in alcohol, was digested in distilled water, and a further solution of its contents obtained; the matter insoluble in this menstruum being set aside for further examination.

F. The watery solution was divided into two equal portions: the one portion was decomposed at a boiling heat, by the addition of subcarbonate of soda; and a precipitate of carbonate of magnesia was obtained, weighing, when dried, 1·7 gr.; which quantity is equivalent to 4·63 grains of dried sulphate of magnesia.

G. The other portion of the watery solution was treated with nitrate of barytes, to free it from its sulphuric acid; and, after filtration, nitrate of silver was cautiously added, so long as any precipitate was produced; but it was so trifling in quantity, that it did not affect a very delicate balance.

H. The substance insoluble in water, was acted upon by acetic acid; a slight effervescence taking place, and a further solution of its contents obtained; which, upon the addition of a carbonated alkali, gave a precipitate amounting to 5·3 grains of carbonate of lime.

I. The remaining substance, when dried, weighed exactly 3·5 grains, and was found to consist entirely of sulphate of lime.

K. In order to ascertain, as accurately as possible, the quantity of iron contained in a given portion of the water, one gallon of the water was boiled in an open vessel, for half an hour, in order to deprive it of its carbonic acid; it was then filtered, and the carbonates remained upon the filter.

L. The carbonates thus obtained were dissolved in diluted muriatic acid; and pure ammonia was added to this solution, so long as a precipitate of a reddish colour was obtained.

M. This precipitate was dried; after which, acetic acid was added to it, in order to dissolve any portion of lime which might have been precipitated along with it.

N. The precipitate was again dried, re-dissolved in diluted muriatic acid, and precipitated by an alkaline carbonate; dried at the usual temperature of 212, and, when placed in the balance, weighed 1.1 gr.

The contents of this water, therefore, may be stated as follow, in one gallon :

Gaseous Contents.					Cubic Inches.
Carbonic Acid	.	.	.	.	13.65
Sulphuretted Hydrogen	.	.	.	.	1.82
Azote	.	.	.	.	3.65
					<hr/> 19.12 <hr/>
Of the Solid Contents.					Grains.
Muriat of Lime	.	.	.	.	9.6
Carbonate of Lime	.	.	.	.	42.4
Sulphate of Magnesia	.	.	.	.	74.08
Sulphate of Lime	.	.	.	.	28.
Carbonate of Iron	.	.	.	.	1.1
Loss in the different experiments	.	.	.	.	4.82
					<hr/> 160.00 <hr/>

MEDICAL HISTORY.

The water now under consideration, claims great attention ; possessing, independently of its gaseous impregnation, an excellent combination of saline ingredients.

Muriat of lime is a substance of great activity in its operation on the human constitution ; and when taken to the extent contained in a quart of this water, it is not probable that it will remain inert. For my own part, I believe that the muriat of lime operates more actively, when received into

the stomach in a state of great dilution, than when taken in a more concentrated form; being less liable to produce irritation; and, from its diluted state, passing more easily through the absorbents; from which, in a more concentrated form, it may be excluded, and its action confined to the first passages. When received into the system, it is a powerful tonic, stimulant, and deobstruent; and thus we may, in some measure, account for the efficacy of this water, in scrofulous cases, general debility, &c. I may here remark, that many mineral waters, famous for the cure of scrofulous affections, have been proved by chemical analysis to owe their medicinal properties entirely to holding a small portion of this salt in solution.

The next substance which presents itself to our notice, is the Sulphate of Magnesia. It is to this salt that the water is indebted for its aperient and diuretic properties. Sulphate of magnesia is one of the most valuable purgatives we possess; and it is not perhaps generally known, that a much smaller quantity of this salt, than is usually taken, will, when dissolved in a large portion of water, act as efficaciously, and much more pleasantly than the dose usually swallowed; it is therefore more than probable,

that when thus presented to us by the chemistry of nature, in combination with the other saline ingredients contained in the water, it will be rendered more active in its operation on the human frame.

The Carbonate of Lime is held in solution by the carbonic acid gas, and possesses the properties of an antacid; and it is remarked by Dr. Willan, that "when the stomach is primarily affected from a relaxed irritable state, with sourness, flatulence, acidity, and the other symptoms of indigestion; the internal use of the water, along with bathing, is of the greatest advantage. The calcareous earth contained, absorbs the acid; while the fixed air extricated, proves a grateful stimulus."

With regard to the Iron contained in this water, the quantity is so small, only amounting to one grain and one tenth in a gallon, that a common observer would never suppose it capable of producing any beneficial influence on the system; and it becomes an enquiry of some interest to determine whether it possesses any claim as a remedy. Medical and chemical writers universally admit, that the most active form in which iron can be administered medicinally, is in its state of solution by carbonic acid; and the

celebrated Dr. Cullen, in his Lectures on the Materia Medica, observes, "that in all cases of laxity and debility, and in obstructions, and slowness proceeding from these causes, iron is employed; though other simple astringents might also answer the effect. Here we ought to beware of too sudden an astringency, which might be attended with bad consequences; and therefore in exhibiting it in these cases, we should give it in small doses, and trust to length of time for a cure; and, by this means, we shall avoid those inconveniences, of which physicians often complain, in their preparations of iron. Mineral waters often produce cures, which we in vain attempt to perform by the combinations in our shops; even although these waters contain nothing but iron. *This is manifestly owing to the weakness of the dose*; in proof of which we find, that the strongly impregnated waters seldom answer so well as those weak ones we commonly reject." By experiment, I found that this water does not part with any considerable portion of its carbonic acid, at a lower temperature than 135°, which may be stated as at least thirty-five degrees higher than the temperature of the human stomach; it is therefore more than probable, that, in this state of chemical activity, the whole

of the iron contained in the water will be carried into the circulation; and we may reasonably expect some beneficial effect from its operation. Dr. Trotter, in his *View of the Nervous Temperament*, says, "there can be no doubt that the efficacy of mineral waters is very considerable, in many cases of indigestion, nervous debility, and those variations of it, usually called bilious. The ferruginous, or those impregnated with iron, are the most valuable; and where *this principle happens to be joined in the same water, with some salt of a purgative quality*, in certain nervous and dyspeptic habits, they are peculiarly useful. Where occasional icterial symptoms prevail, from obstruction of the biliary ducts; whether from spasm, mucus, or other causes, which retard the peristaltic motion of the intestines, by the bile being deficient; such combination of iron and purgative salt have the best effects; as the *laxative* power of the one does not interrupt the *invigorating* quality of the other. Iron, dissolved in water by the chemistry of nature, seems to act more powerfully by its *extreme diffusion*; and as, in this state of solution, it is capable of circulating through the minutest vessels; its stimulant and strengthening powers are exerted on the remotest parts of the system.

Much of the operation of chalybeates may be, by chemical union with the fluids of the body; but there can be little doubt, that they also directly stimulate and excite the nervous substance. In those persons, whose cold extremities and pale complexion indicate a languid circulation and poor blood, besides weak digestion, chalybeate waters often perform wonders."

The carbonic acid gas possesses no small power over the human frame; it is to this æri-form fluid that many mineral waters, in a great measure, owe their activity; in consequence of its holding some of their most powerful saline contents in solution: and thus enabling them to penetrate the inmost parts of the system. When common water is charged with this fluid, it acquires briskness; is pungent to the palate; sparkles when poured from one vessel into another; and, when received into the stomach, has a most exhilarating effect, sometimes approaching to a degree of intoxication. It is, therefore, a grateful stimulus, to which a considerable and very useful influence may be assigned.

The action of the sulphuretted hydrogen gas, when received into the system, I have noticed, when treating of the Dinsdale Water.

The azotic gas ought not to be passed over in

silence. It is yet undiscovered whether this gas is a simple or a compound substance; we cannot unite it with water by agitation; and we are at a loss to know in what manner nature forms this union. United with a certain portion of oxygen, it forms the air we breathe; but, alone, it is incapable of supporting animal life. We are unacquainted with its effects, when received into the human stomach; but it is supposed to act as a stimulus to that organ.

From the preceding survey, it appears, that this water possesses the powers of a tonic and alterative, united with its effects as an aperient and diuretic: and it is worthy of observation, that, although every simple medicine which has hitherto proved beneficial to mankind, has met with much opposition from the interested views of some, and the ignorance of others; yet, for upwards of a century and a half, during which time this water has proved generally useful, it has met with the sanction and approval of our most eminent physicians. Dr. Short, in his *Analysis of Mineral Waters*, places it immediately after Harrowgate, and gives it a high character. The late Dr. Willan, a physician eminent for his scientific attainments, published a treatise upon this water, and gives a most

favourable opinion of its efficacy; and many physicians, now living, recommend its use, not only from the benefit they have seen others receive, but from personal experience of its good effects.

What has been stated, with regard to a preparation, previous to commencing a course of the Dinsdale Water, is equally applicable to the Waters of Croft; and, in every instance, will be of service in assisting their operation.

With regard to the internal use of this water as a remedy. It agrees well, and sits lightly and easy upon delicate stomachs; and has been found particularly useful in dyspepsia, proceeding from a debilitated state of the digestive organs; scrofula, affections of the urinary organs, rickets, female diseases, rheumatism, cutaneous affections, &c.

Perhaps there is no disease which appears in such a variety of forms, or which is so difficult to cure, as SCROFULA. The late Dr. Cullen supposed scrofula to depend upon a peculiar formation of the lymphatic system. Mr. R. Carmichael, in his Essay on Scrofula, considers this disease as arising from, and generated by, a disordered state of the digestive organs. The late Dr. Heberden attributed much influence in

its production to the habitual use of impure water; others consider scrofula as a disease closely connected with a delicate constitution, lax fibres, and debility. My own opinion is, that scrofula, in a great measure, depends upon a predisposition to become affected by certain diseases, which is communicated by the parent to his offspring; this is, in some instances, more strongly marked than in others; but, although this predisposition to disease exists, yet it is inert, and insufficient of itself to produce disease, but requires the agency of some exciting cause; as, any uncommon or temporary exposure to wet and cold; confinement in cold, damp habitations; the living upon food of an unwholesome and indigestible nature; the want of warm clothing; breathing impure air; the neglect of salutary exercise; indolence, &c.

The first appearance of this disease is generally in that of small oval tumours under the skin, upon the sides of the neck, below the ear, or under the chin; which, in process of time, enlarge and suppurate; the tumour then gradually subsides; whilst the ulcers, thus formed, spread unequally in every direction. Occasionally, the joints of the elbows, ancles, fingers, or toes, are the parts which are first affected; when this is

the case, the joints swell, and become enlarged ; the slightest motion produces deep-seated and excruciating pain ; matter is formed, which is discharged at numerous small openings ; and sometimes it is of so acrimonious a nature, as to erode the ligaments and cartilages, and produce a caries of the neighbouring bones. The eyes are sometimes the seat of this disease, and are affected with inflammation, causing ulceration of the eyelids, and not unfrequently terminating in loss of sight.

This disease appears also in a great many other forms ; and when it mingles with any accidental or local complaint, it uniformly aggravates every symptom ; rendering that disease more difficult of cure.

Numerous are the cases upon record, in which the Croft Water has been found of service in the different forms of scrofula above enumerated ; and many remarkable cases have fallen under my own observation. When applied externally to scrofulous sores, it moderates the discharge, produces a secretion of healthy matter, and promotes the granulating process ; whilst the internal use of the water gives tone to the digestive organs ; and thus restores strength to the system. The inflammation of the eyes will frequently yield to

the application of this water, after every other means have failed; this fact is noticed by Dr. Willan, in the following words: "There is an inflammation of the eyes, a common attendant on scrofulous complaints, and which sometimes occurs in infants, without any other appearance. The cure is not unfrequently tedious; nor, if attempted by the external application of astringents, &c., without danger. I know, however, from many cases, that a proper use of this mineral water is a safe and effectual remedy."

"The cases recorded of this kind are the most numerous, and the cures performed almost miraculous. When the eyelids were much enlarged, and sore, with a perpetual flow of tears, and vision much impaired, a complete cure has been made in less than a month, and every disagreeable symptom removed."

The affections of the urinary organs, in which this water has been found of most service, are, **DIABETES** and **GRAVEL**.

In addition to my own experience of the efficacy of the Croft Water in **DIABETES**, I have great pleasure in being permitted to lay before the reader, the following extract from a letter, from the late Dr. Cayley, of Durham, to Sir William Chaytor:

“During the severe weather, last spring, I was much troubled with a diabetic affection, to a great extent, which disappeared with the frost, without any remedies; in the month of July; however, it returned, and went on increasing till the middle of September; accompanied occasionally, in the night season, by a paralytic affection of the neck of the bladder; a dry mouth and tongue, dry skin, constant lethargy, a false and craving appetite, and other unpleasant symptoms; which, all combined, gave me great uneasiness; and, hearing that our friend Mr. Raine had been completely cured of a similar, but much severer affection, by drinking the Croft Water, I resolved to have recourse to it; and, after one week’s drinking and bathing, I am happy to say, that I feel myself completely restored.”

GRAVEL is produced by a disposition in the secretion from the kidneys, to form calculous matter; and is supposed to depend upon the presence of an acid principle in the secreted fluid, known by the name of uric acid. This acid is one of the component parts of the urine, when the body is in perfect health; and is not produced by any diseased action in the animal economy. In health, it is held in solution by

the urine; in gravel, a portion of it is deposited in the cavities of the kidneys, destined to collect and evacuate the urine, in the form of sand or sabulous matter; and, when once deposited, it continues to increase by the deposition of repeated layers of uric acid; until, in the process of time, calculi are formed.

The symptoms of this disease are, a dark appearance of the urine, as if it were mixed with coffee grounds, and a dull heavy pain in the loins, caused by the irritation of foreign matter in the kidneys. A fit of the gravel, as it is termed, is caused by the passage of sand, or calculi, from the kidney, along the ureters, to the bladder; producing violent pain in the loins, and a numbness of the thigh on the side affected; nausea and vomiting, and frequently a suppression of urine.

Every attempt to dissolve calculi in the kidneys or bladder, has hitherto failed; hence, the only method of cure must consist in introducing such substances into the circulating fluid, as will check the deposition of the uric acid, and thus prevent the formation; or, when formed, the enlargement of calculi. Dr. Willan observes, "the water, I find from experiment, has a much more considerable effect as a diuretic than common

water ; must therefore be well adapted, by increasing the flow of urine, to wash out sabulous concretions from the pelvis (of the kidney), ureters, and bladder ; and perhaps alters the state of the secreted liquor, making it less liable to form such depositions.”

Whether the Croft Water possesses any power, as a solvent, over calculi, it is impossible for me to state ; but it is certain that, during a course of this water, the mucus, and purulent discharge which frequently accompanies the urine, is rendered less painful ; and, in many instances, calculi are voided, to the great relief of the patient.

This water has been found of service in RICKETS. This disease generally appears between the ninth month and second year of infancy ; after the latter period, it rarely shows itself. It is caused by a deficiency of the phosphate of lime or animal gluten in the bones ; in consequence of which they are deprived of strength and solidity, producing distortion of the cylindrical bones, incurvation of the spine, &c. &c. Dr. Willan observes, “weakly and delicate children, by bathing in Croft Water, have, in a short time, been restored to health and vigour. The rickets, which depend upon, or are nearly connected with, this habit in children, and generally prove

very obstinate, yield more readily to this treatment than any course of medicines. Indeed, it is difficult, at a tender age, to make them take, internally, what might be proper, for any length of time."

Mr. John Veirac, surgeon at Rotterdam, in a Treatise on the Rickets, which obtained a premium from the Society of Arts and Sciences, at Utrecht; and Mons. Bonhomme, of Paris, in a Memoir on the nature and cure of the same disease; assert, that this disorder arises from the developement of an acid in the stomachs of infants, approaching in its properties to the vegetable acids; but in particular the oxalic acid, which is incorporated with the mass of blood, and insinuates itself into the very bones.* Assuming this theory to be correct, may not the carbonate of lime contained in the Croft Water, by neutralizing the acid in the stomach,—whilst by its alterative and tonic powers, it imparts strength to the system,—cure the disease?

The bed of the rickety patient should consist of a hair mattress; and, that the weight of the body may exert as little influence as possible on the bones, he should be placed upon his back.

* Mr. J. Veirac asserts, that the blood in these cases, after death, effervesces with the *Liquor Ammoniae Subc.*

The cold bath should be used frequently, and its effects increased by friction with flannels; the diet should be generous and nutritive; and the child, when taken into the open air, should be carried in an horizontal posture.

IN CHLOROSIS, MÆNORRHAGIA, FLUOR ALBUS, and the other diseases incident to the fair sex, the Croft Water is equally as efficacious as the Dinsdale Water; and what has been said of these diseases, when treating on the Dinsdale Water, is also applicable to the Waters of Croft.

This water has been long famed in the cure of Chronic Rheumatism. “In stiffened and enlarged joints, from that cause, weakness, and loss of motion, it has performed several cures; of which the crutches formerly hung up were testimonials.”

The Croft Water has also been found of great service in diseases of the skin, particularly in the different forms of Herpes and Lepra, the Itch, and many other affections of the cuticle, usually called Scorbutic.

“In old age, the inferior extremities are exposed to various affections, inflammatory swelling and tension, defluxion of humours of the erysipelatous kind, and other eruptions depending on

the scorbutic habit, joined to weakness of circulation, whose termination is frequently in ulcers, very obstinate and difficult to cure. In all those cases, the water of Croft has been employed with essential service, and particularly in the last instance. Defluxions on the legs, not yielding to the common course of medicine, have, by bathing and drinking it regularly, been entirely removed in the space of a few weeks."

The following cases are extracted, verbatim, from an old manuscript, dated 1717, at present in the possession of Sir William Chaytor.

"Sir William Bowes, of Streatlam Castle, was violently troubled with the Jaundice, so that no medicines would pass through him; he sent for Dr. Cuthbert Chambers, of Rippon, who advised him to Croft, and went with him, and gave him a bath that night, and the water to drink; and the next morning he had a stool, and, after three baths, and drinking the water six days, he returned cheerful home.

A journeyman shoemaker, in Cleveland, near Stoxley, having no sense or feeling, from the hips downward, for two years; having tried hot and cold baths, oyles, spirits, and horse dunghills, without effect; was carried to Croft, and at his

first bathing felt it cold at the bottom of one hip, and sole of one foot; at the second, the colour came into his skin, and, at the third, he could ride alone to the bath; and, in a short time, he rid home, and became perfectly well.

A son of Mrs. Lodge, of Darlington, was blind several years, by humors in his eyes, and which cost her in doctors above ten pounds; yet after nine times bathing, he became quite well.

Mr. Robert Tate, drugster, in the Strand, after a violent fever, and taking much Jesuits' bark, had all the symptoms of a consumption; rid to Croft, anno 1713; bathed in the bath, drank the water, and returned home fat and jolly.

John Robinson, late servant to the Hon. John How, had a great cold, and consumptive cough; rid to Croft in the winter, and drank the water a fortnight, when he returned home quite well.

Many were cured of the Stone and Gravel.—John Wilson had pined away to nothing; and, by drinking the water, said, “there came away as much gravel as would scour a great kettle;” and he soon grew fat and jolly.

John Raddish, a porter, on Ludgate Hill, had a stoppage in his urine for eight days; and, drinking two flasks of the sulphur water, he

presently urined freely, and the next morning a great quantity of corruption came away; and, by drinking the water seven days, he became perfectly well.

Old Mr. Middleton, of Blackwell, and many others, were cured of a similar complaint."

There are in all upwards of two hundred cases recorded in the hand-writing of Sir William Chaytor, Bart., grandfather to the present Sir William: many of the cases were cured in London, where, as appears from the *POSTMAN* Newspaper, date, July 25th, 1713, this water was sold; as the advertisement quaintly observes, "secured in flasks, after the German manner, at the Golden Key, on Ludgate Hill, price one shilling the flask, or ten shillings the dozen, which is much about the prime cost, there being no design of gain by the gentleman in whose estate these waters spring, but only to accommodate the public."

ANALYSIS OF THE NEW SPA, AT CROFT.

This water, when drawn from the spring, is transparent, sparkles in the glass, and gives out a strong smell of sulphuretted hydrogen gas;

upon standing exposed to the air, for a short time, it gradually loses its transparency, becomes milky, and a minute powder is deposited. This powder is the sulphur, separated from the sulphuretted hydrogen gas, by the oxygen of the atmosphere uniting with the hydrogen. The temperature of the water is 52° .

ACTION OF TESTS.

1. Nitrate of Lead; an immediate, copious, black precipitate: with the boiled water, a white precipitate is produced.*
2. Lime Water rendered the water milky.
3. Barytes Water; a copious white precipitate.
4. Oxalic Acid rendered the water milky.
5. Oxalat of Ammonia; a dense white precipitate.
6. Muriat of Barytes; an immediate, copious, white precipitate.
7. Nitrate of Silver; a black precipitate: with the boiled water, a white precipitate is produced.

* It requires long boiling to deprive this water of its sulphuretted hydrogen gas. I have detected its presence after the water had been boiled 20 minutes.

8. Pure Ammonia rendered the water milky.

9. Prussiat of Potash; no change.

10. Tincture of Galls; no change.

11. Muriat of Lime rendered the water rather brown; and, after standing some time, a dark coloured precipitate was produced; with the boiled water, the precipitate is white, and soluble in dilute nitric acid with effervescence.

12. Carbonate of Ammonia and Phosphate of Soda; a moderate white precipitate.

EXAMINATION OF THE GASEOUS CONTENTS.

A. Eight ounces of the water were made to boil in a glass flask, connected with a Woulf's apparatus, into which a solution of lead, in excess of acid had previously been introduced. In this manner, a quantity of sulphuret of lead was obtained, which, when washed and dried, weighed 2.65 grains. This quantity may be stated as the representative of 1.39 cubic inches of sulphuretted hydrogen gas.

B. To an equal quantity of water, as was employed in the last experiment, an acidulated solution of acetate of lead was added, and the gaseous contents made to pass into a Woulf's

apparatus; substituting, for the acetate of lead in the bottles, a quantity of lime water. In this manner, 1·9 of carbonate of lime were obtained, representing ·95 of a cubic inch of carbonic acid gas.

C. A glass flask, containing exactly eight ounces, was, with its ground-bent tube, completely filled with the water at the spring. This water was gradually heated by means of a spirit lamp, and the gas received over water into a graduated jar; the boiling temperature being continued until no more gas came over. The jar, with its contents, was allowed to remain inverted, for a length of time, and occasionally agitated, to facilitate the absorption of such portion of the gas as might be soluble in water. There remained ·3 of a cubic inch of gas; the necessary estimates and corrections being made for barometrical pressure, assumed at the standard 30°; and for thermometrical temperature at 60°; which the water did not appear capable of absorbing.

D. Upon plunging a lighted taper into this residuary gas, it burnt for a moment with a blue flame, and became extinguished; its volume being reduced ·07.

E. Lime water, thrown up into the tube, became sensibly turbid; and the volume of the

gas was further diminished $\cdot 03$. The remaining $\cdot 2$ were neither combustible, nor capable of supporting combustion.

The two last experiments indicate the presence of carburetted hydrogen gas and azote in this water; and which, perhaps, may be stated most accurately as existing in about equal quantities.

EXAMINATION OF THE SOLID CONTENTS.

A. Eight ounces of the water slowly evaporated, yielded ten grains of solid matter, smelling strongly of sulphur.

B. In order to separate the muriates, it was digested in alcohol for twenty-four hours.

C. The alcoholic solution was evaporated, and yielded a small quantity of solid matter, weighing one grain, which deliquesced considerably; and which, upon further examination, was found to consist entirely of muriat of lime.

D. The saline matter insoluble in alcohol was digested in distilled water, and a further solution of its contents obtained.

E. The watery solution was divided into two equal portions; the one portion was decomposed

at the boiling temperature, by a solution of sub-carbonate of Soda; and a precipitate of carbonate of magnesia obtained, equivalent to 2·1 of dried sulphate of magnesia.

F. The other portion of the watery solution was treated with nitrate of barytes, to free it from its sulphuric acid; after which, nitrate of silver was cautiously added, so long as any precipitate was produced: in this manner, a precipitate of muriate of silver was obtained, equivalent to ·1 of a grain of muriat of lime.

G. The substance, insoluble in alcohol and in water, was acted upon by acetic acid, and a further solution effected; during which, a slight effervescence was observable.

H. The acetic solution was treated with sub-carbonate of soda, and a precipitate of carbonate of lime obtained, weighing, when dried, four grains.

I. The remaining salt, insoluble in acetic acid, when dried, weighed ·5 of a grain, and consisted entirely of sulphate of lime.

From this analysis, the gaseous and solid contents of this water will stand as follow, in one gallon: .

Gaseous Contents.				Cubic Inches.
Sulphuretted Hydrogen	.	.	.	22·24
Carbonic Acid	.	.	.	15·20
Azote and Carburetted Hydrogen	.	.	.	4·8
				<hr/> 42·24 <hr/>
Solid Contents.				Grains.
Muriat of Lime	.	.	.	19·2
Sulphate of Magnesia.	.	.	.	67·2
Carbonate of Lime	.	.	.	64·
Sulphate of Lime	.	.	.	8·
Loss	.	.	.	1·6
				<hr/> 160·0 <hr/>

This water contains also a small portion of petroleum, or mineral tar; but I cannot state the quantity with any degree of accuracy, having merely collected it from the surface of the water in the well.

MEDICAL HISTORY.

In addition to its very strong gaseous impregnation, this water holds in solution a considerable portion of very active saline ingredients; and, upon comparing the analysis of this water, with

that of other mineral waters of a similar character; we are led to conclude, from a knowledge of their effects upon the human constitution, that this water possesses the properties of an aperient and alterative.

It is rather unpleasant to the palate, having a nauseous taste, followed by a sense of metallic sweetness. When taken to the extent of one pint, it acts upon the bowels; and, in consequence of its strong gaseous impregnation, great care and caution must be observed in exceeding this quantity to a dose; and also in being properly prepared by purgative medicine, previous to commencing a course of it.

An omission on this point, especially when the water has been taken in a large quantity; is frequently followed by head-ache, distension of the stomach, and sickness. It must therefore be used with caution; and a previous preparation on no account neglected.

We have seen, when treating on the Dinsdale Water, that it possesses a power, peculiar to waters impregnated with sulphuretted hydrogen, of correcting a disordered state of the digestive organs; and, by its alterative property, restoring the diseased secretions to a healthy state. For further information upon this point, the reader

is therefore referred to the Medical History of the Dinsdale Sulphur Water; as the different methods of treatment necessary in the various disorders in which waters of this class have been found useful, is there fully entered into.

There are, however, certain diseases of the skin, in which this water has been found highly useful, when used as a bath; namely, PRURIGO *formicans*, PRURIGO *senilis*, LEPRA *vulgaris*, LEPRA *alphoides*, PSORIASIS *inveterata*, and SCABIES.

PRURIGO *formicans* is characterised by an eruption of papulæ very slightly elevated, and nearly of the same colour as the surrounding skin. The itching which accompanies this eruption, is incessant, and is combined with other symptoms of a painful and distressing nature, resembling animalculæ creeping over and stinging the skin; and, at other times, the sensation is that of hot needles run into and piercing it. Upon standing before the fire, but particularly when warm in bed, these symptoms become intolerable. Upon scratching the surface, minute black spots, or scabs, form upon the top of the abraded papulæ, and are seen spotting the surface of the body. This disease affects the whole of the trunk and limbs, excepting the palms of

the hands and soles of the feet; but is most copious round the waist, and upon those parts where the clothes fit tight to the body.

I have met with two or three cases of this disease; and, in each instance, the constitutional derangement was very great, for the disease was of long standing. In the first instance, I directed my attention to the removal of the febrile state of the system, by gentle, cooling aperients; and, after having accomplished this, the daily use of the warm sulphur bath, the moderate use of the water, and a light nutritive diet, never failed in effecting a cure.

PRURIGO *senilis*. This disease, as its name implies, is confined to the aged: and frequently renders the latter years of existence a burden intolerable to be borne. The appearances which it exhibits are very similar to **PRURIGO *formicans***; with this exception, that the papulæ are somewhat larger and more elevated. In this disease, my patients have expressed themselves in the strongest language, when speaking of the benefit they have derived from the use of the warm sulphur bath; and I have invariably remarked, that the constitutional symptoms rapidly disappeared under its daily use.

LEPRA *vulgaris* and **LEPRA *alphoides*** have

been noticed when treating of the Dinsdale Sulphur Water; but the following case must not be passed over in silence.

A young lady consulted me in June, 1833; she had laboured under *LEPRA vulgaris* for two years; she had consulted the most eminent amongst the faculty, both in London and in Edinburgh; and had just returned from Harrowgate, without having derived any benefit. I have seen very many cases of this disease, but I never beheld it in so dreadful a form as in the present instance. Her arms, shoulders, breast, and legs, being covered with large scales; upon removing which, a thin ichor was distinctly seen oozing through the red shining skin beneath; which, hardening, formed a new scale or scales upon the surface. Her maid informed me, that she frequently collected a large handful of scales from her bed in a morning. The constitutional derangement was very great, and her general health had suffered grievously. Under the daily use of the warm sulphur bath, combined with gentle, cooling aperients, and a mild nutritive diet, this young lady was so far recovered, that in August she returned to her home. I did not see her again until February in the present year, when the eruption had completely disappeared,

leaving that part of the skin which it had occupied, covered with copper-coloured blotches. I had the pleasure of seeing this young lady again last June, when this unsightly appearance had also vanished, leaving the skin healthy and sound.

PSORIASIS inveterata generally begins with separate and irregular patches, which become confluent, or run into each other, until the whole surface of the body, with the exception of the palms of the hands and soles of the feet, is covered with an universal scaliness, interspersed with deep furrows; the skin becoming stiff, and evidently thickened; the nails also frequently become thickened and opaque, and frequently drop off, and are again renewed. I am satisfied in my own mind, that this disease is neither more nor less than *LEPRA vulgaris*, in a more aggravated form; but, as nosologists think otherwise, I have adhered to their classification.

I have never known this disease cured by any means, either natural or artificial; for my patients wanted either patience, or they could not spare the time necessary for its eradication. One patient, from London, visits me annually for a month, and, when he is half cured, is under the necessity of returning to his counting-house; and he informs me, that the benefit he derives

from the use of the sulphur bath, holds the disease in check for a considerable time. I can only say, therefore, that unless the individual labouring under this disease, is possessed of patient perseverance, and has his time at his own command, he may be relieved, but he will never be cured.

SCABIES. The Itch is too well known to need any description. This water, used as a warm bath, has been found highly useful in this disease; but as the inhabitants of Croft are not very partial to visitors afflicted with this unpleasant malady, it may be as well to inform the reader of a very safe and certain remedy for the disease, without visiting the Sulphur Well.

Take of Beaufoy's Solution of Chloruret of Soda, or Chloruret of Lime, and of Distilled Water, equal parts; sponge the body, but particularly the affected parts, well with this lotion, twice or thrice a day, until cured.

There are two points, however, which I have omitted when treating of the Dinsdale Water, viz., the probable efficacy of sulphureous waters in cases of poisoning from lead and arsenic.

Painters, plumbers and other mechanics, whose business causes them to be frequently handling lead, or preparations of lead, are subject to a

disease called the painters' colic; produced by the absorption of minute particles of this poisonous mineral; which not unfrequently terminates in paralysis of the wrists and upper extremities.

Observing the power which sulphuretted waters possess when brought in contact with preparations of lead, in causing them to re-approach to the metallic state; it is but reasonable to infer, that the use of this water, both externally and internally, in disease arising from this cause, will be of service. It has not been my lot to see any case of poisoning from lead, where it had been introduced into the system, through the pores of the skin, as is usually the case in painters' colic; but I have seen cases of poisoning from lead, which had been received into the stomach in solution, in wine and cider. Wines are frequently sweetened with a solution of lead; and cider, from its being prepared in vessels lined with lead, frequently holds a portion of this mineral in solution. In both cases, water impregnated with sulphuretted hydrogen gas, (the preparation used was a solution of sulphuret of potash,) gave immediate relief, after other means had failed. We may therefore reasonably infer, that mineral waters, strongly impregnated with sulphuretted hydrogen gas, as the Waters of Dinsdale and

Croft, and which also possess a laxative power, will be found of service in this dangerous malady.

“When arsenic has been received into the stomach, in a solid form, we are unfortunately in possession of no remedy which will decompose the arsenic without producing a poisonous material. If it has been administered in the fluid form,—after the stomach has been evacuated, water, impregnated with sulphuretted hydrogen gas, offers the fairest prospect of success.”

I have never seen a case of poisoning from arsenic; but as the preceding passage, which I have taken from my notes of Sir Geo. Tuthill's Lectures on the Practice of Physic, is much to the purpose; I have given it, as the information here conveyed may be of service to others. May not waters of this class be found of service by individuals recovering from the effects of this active poison?

Thus much for the medical powers of these waters, when employed internally: I shall now proceed to the consideration of them as an external remedy.

ON
BATHING IN GENERAL.

THE BATH is a remedy of great antiquity, and deserves more attention than usually falls to its share.

The frequent use of the bath is attended with many advantages: the surface of the body is freed from that scaly matter which always collects, even in the healthiest individuals; the pores of the skin are opened, and the natural perspiration is promoted; the limbs are rendered supple; and a variety of cutaneous disorders, the consequence of want of cleanliness, are avoided. The excellent quality which it possesses of removing all obstructions from the cutaneous pores, and thus giving activity to the vessels of the surface, is not the sole effect of bathing; it has a certain influence on the animal heat, and operates powerfully on the nervous system.

A person in sound health and strength may take a bath at any time, except immediately after meals. Cleanliness and attention to the health of the skin, is most influential in preserving the tone of the nervous system; and in contributing to mental and bodily comfort. If a bath cannot be had at all places, soap and water may be obtained everywhere, and leave no apology for neglecting the skin; or, if the constitution be delicate, water and vinegar, or water and salt, used daily, form an excellent and safe means of cleansing and gently stimulating the skin:—to the invalid they are highly beneficial, when the nature of the indisposition does not render them improper. A rough, rather coarse towel is a very useful auxiliary in such ablutions. Few of those who have steadiness enough to keep up the action of the skin by the above means, and to avoid strong exciting causes, will ever suffer from colds, sore throats, or similar complaints; while, as a means of restoring health, they are often incalculably serviceable. If one-tenth part of the persevering attention and labour bestowed to so much purpose in rubbing down and currying the skins of horses, were bestowed by the human race in keeping themselves in good condition, and a little attention were paid to diet and

clothing; colds, nervous diseases, and stomach complaints, would cease to form so large an item in the catalogue of human miseries. Man studies the nature of other animals, and adapts his conduct to their constitution: himself alone he continues ignorant of and neglects.*

Independently of the beneficial effects arising from the Waters of Dinsdale and Croft, as a common bath, I believe that a large portion of medicated water is absorbed and carried into the circulation; and perhaps from the peculiar manner in which it is received into the system, rendered more efficacious in the removal of disease.

The power of absorbing which the skin possesses, is certainly not so active as the surface of the internal cavities of the body, yet it is very great. The increase of weight in the body, after remaining some time in the warm bath; the evident swelling of the inguinal glands, after long continued immersion of the feet in water; the effects of cathartic medicines applied externally;† the effects of mercury by friction; and

* See the Principles of Physiology applied to the Preservation of Health, by A. COMBE, M.D.

† "Cathartic and vermifuge medicines applied externally," says Darwin, "to the abdomen, seem to be taken up by the cutaneous branches of lymphatics and pouring on the

the effects of medicated baths, incontestably prove, that absorption is effected by the skin, under different circumstances, with more or less activity.

Cruikshanks, in his *Anatomy of the Absorbent Vessels*, says, "that the surface of the skin absorbs other fluids which come in contact with it, I have not the least doubt. A patient of mine, who had a stricture in the œsophagus, received nothing, either liquid or solid, into the stomach, for two months; he was exceedingly thirsty; I ordered him the warm bath for an hour, evening and morning; his thirst vanished in the same manner as when he used to drink by the mouth."

I have frequently known the Dinsdale Water, when used as a warm bath, produce a purgative effect upon individuals, who had previously been in the habit of using the common warm bath, without such effect being the consequence. The following remarkable case occurred in my practice, in 1827.

Mrs. H., aged 46, had suffered severely for three years, from a tumour in the right side, supposed by her medical attendants to be an enlargement of the liver; her bowels were re-

intestine, by the retrograde motion of the lacteals, without having passed the circulation."—*Zoonomia*, vol. 1, p. 499.

markably costive, requiring the daily use of cathartic medicine; the evacuations watery; she was much reduced; the skin charged with bile; quick pulse, and hectic fever. After drinking the water two days, she used the warm bath; immediately after which she was attacked with a violent purging; to her surprise, the tumour in the right side began to move across the abdomen; and, in the course of three hours, a large round mass of hardened matter was expelled with much pain. Upon cutting this mass, a cherry-stone was found in the centre, round which it appeared this matter had gradually collected. Mrs. H. rapidly recovered.

The Waters of Dinsdale and Croft are also powerfully stimulant when applied to the surface, and consequently excite more action than the simple cold bath; causing a greater determination to the skin; a fact well known to those who are in the habit of using them.

THE COLD BATH.

When a healthy person is immersed in the cold bath, he first experiences a general sensation of cold, accompanied with convulsive sobbings,

usually called the *shock*; which is occasioned by the intensity of the cold rendering torpid the vessels on the surface of the body, and determining the blood to the interior; this is followed by a general warmth or glow upon the surface, which is referred to the *reaction* of the system; thus enabling the body to resist an injurious external impression. If the use of the cold bath be not succeeded by this glow, upon which its efficacy depends; but, on the contrary, be followed by shiverings, head-ache, sickness, &c., it ought, on no account, to be persisted in.

It is a popular opinion, that it is highly dangerous to go into the cold bath, when heated by exercise; it is, however, a practice founded in error; and has occasionally produced, not only alarming, but fatal consequences. In such cases, the effect is usually imputed to going into the water when too warm; whereas it arises from going into it when too cold. “For, though it is perfectly safe to go into the cold bath in the earliest state of exercise, nothing is more dangerous than this practice after exercise has produced profuse sweating, and terminated in languor and fatigue; because, in such circumstances, the animal heat is not only sinking rapidly, but the system parts more readily with the portion that

remains.”* The most proper state for taking the cold bath, is, when, by some gentle exercise, the heat of the body is brought to its highest point, *without causing perspiration*; the bather should then undress quickly, and boldly plunge into the water; the shock will, by this means, be diminished, and the occurrence of the salutary glow will be sure to succeed.

It is better to continue completely immersed in the water, for a short time, than to make repeated plunges; a single complete immersion of the whole body is sufficient. The pulse is variously affected during immersion in the cold bath: in some individuals it is accelerated; in others, rendered slower; but, in all cases where the immersion has been *improperly prolonged*, it is diminished both in frequency and strength. Moderate exercise ought be continued for a time after coming out of the bath, so as to encourage gentle perspiration.

The vigorous and robust may use the cold bath early in the morning; but individuals, whose constitutions are delicate, should not use it until after breakfast, when the system will have acquired some degree of strength to support

* See Dr. Currie's Medical Reports on the Effects of Water, cold and warm, as a Remedy in Fever, &c.

the shock, and sustain the reaction so necessary to health.

“Cold bathing is indicated,” says Dr. Saunders, “in all those disorders characterized by a languor and weakness of circulation, accompanied with profuse sweating and fatigue on very moderate exertion; tremors of the limbs, and many of those symptoms usually called nervous, when the moving powers are weak, and the mind listless and indolent; but, at the same time, when no permanent morbid obstruction, or visceral disease is present.”

I have seen the cold bath produce the most beneficial effects, in that form of Rheumatism usually called chronic. I am well aware that professional men are not altogether unanimous, with regard to its use in this disease; some physicians recommending, whilst others again have disapproved of it. I never employed the cold bath as a remedy in this form of disease, until ten years ago; when a medical friend, who had long suffered severely from chronic rheumatism in his feet and hands, which were so painful, occasionally, as to render the slightest movement agony, determined to try its efficacy: and, after using it every third day for six weeks, he declared to me, that he had never felt himself better in

the whole course of his life. I have seen him twice since that time; and he informed me, that he had never had any return of his complaint, until May, 1826, two years from the time of his first using the bath; when, perceiving some symptoms of a relapse, he again made use of the water, for a short time, which had the effect of removing the unpleasant symptoms.

The fortunate termination of the above case determined me to make a trial of its powers, as a remedy in this disease. I have, accordingly, recommended the use of it; and I have never known any unpleasant effects arise from it; on the contrary, the result has been highly satisfactory. I have almost invariably remarked, that, after using the first, and sometimes the second bath, the invalid has had a slight accession of fever in the evening of the day he made use of it; which terminated, in the course of twelve hours, in the usual manner; with this exception, that the sweating stage continued longer than usual, and was remarkably profuse.

When the invalid has been afraid of the plunging bath, I have advised the use of the cold shower bath, with precisely similar effects; upon the whole, I consider it an invaluable remedy, when properly employed. It ought never

to be used when there are any febrile symptoms present, or when the patient's pains are increased by the warmth of his bed. In short, it is only applicable in that form of chronic rheumatism *unattended by inflammation*; and, when visceral disease is present, it becomes altogether inadmissible; and ought, therefore, never to be used by the invalid, without first consulting his medical attendant.

The cold bath is injurious in early infancy; the powers of life not being sufficiently formed to sustain the shock; and I have, in more than one instance where it had been improperly employed, seen it produce Hydrocephalus and Croup.

SHOWER BATH.

The cold shower bath possesses all the good qualities of cold immersion, with a less tendency to produce chilliness and cramps. It is perhaps the safest mode of cold bathing.

“In nervous diseases, very much of the good effects of the bath arises from the shock, which the nervous system receives from the suddenness of the immersion; this effect is to a great degree insured by the use of the shower bath, which is

always a good substitute, where circumstances prevent the use of the common cold bath; and is, in some cases, even to be preferred, as affording a more regulated application, and one that acts immediately upon the head.”*

It is of great service in that species of headache, commonly called nervous; in hysterical affections, loss of muscular motion, and in many cases of habitual costiveness, arising from debility, unconnected with organic disease. I have seen it of infinite service, when applied to the head, in insanity, while the patient's body was immersed in the warm bath. In this mode, it is of use in some cases of obstinate head-aches, and in apoplexy, after previous depletion by bleeding and purging.

THE TEPID BATH.

It has been absurdly supposed, that all baths, which do not in the first instance produce a sensation of cold, must be relaxing. The impunity with which many people remain in the tepid bath for a length of time, is decisive on this point;†

* See Sir Arthur Clarke, on Bathing.

† “At Bath, many of the guides remain for several hours, every morning, immersed nearly to the neck in the warm

in fact, so far from relaxing or debilitating the system, as is the vulgar opinion, it invigorates, and has a tendency to alleviate all local irritations; inducing a state of repose peculiarly inviting to sleep, diminishing the animal heat, and the frequency of the pulse; rendering it fuller and softer, and producing the most soothing and refreshing effects.

The soothing sensation which it gives, and the serenity of mind which it inspires, indicate its good effects: where these are not felt, but, on the contrary, an increase of dejection and weakness, they are proofs of its doing harm, and it must be given up.

There exists between the skin and the digestive organs a *sympathy*, or, as it is termed in medical language, a “consent of parts;” in other words, if the skin is affected, the stomach and bowels sympathise, and take on a similar action; and this is a consideration of great importance in the cure of bilious and dyspeptic complaints; and hence, as Dr. Trotter observes, “The warm bath is of infinite service in that dry, harsh state of the skin, which frequently accompanies a dis-

bath, without being relaxed or weakened by it; but, on the contrary, they are in general a robust, vigorous, and long-lived race of persons.”—*Falkner on Bath Waters*.

ordered state of the digestive organs, where the stomach and bowels become torpid from sympathy with the surface; in such cases, permanent relief is rarely obtained, unless a free perspiration follow the use of it; so liable are affections of the stomach, and the suppression of the cuticular discharge, to alternate with each other.”* In such cases, also, it will frequently produce sleep, after every other means have failed.

It is a useful remedy in the hectic state of the system, whether arising from general or local irritation; and in all those diseases in which the animal powers are weak, and cannot support the reaction of cold immersion.

I have seen it of great service in the first stages of pulmonary consumption; in one or two cases, I believe it contributed as much to the recovery of the patient as any other means employed; but it is only in the early stages of this disease, that essential service is to be derived from this remedy; at a later period it must be used with caution; and, when anasarcaous swellings are present, it ought never to be used.

To delicate individuals, particularly females, hovering on the brink of incurable disease, the

* Vide his Treatise on Nervous Temperament, &c.

tepid bath often proves a powerful agent in the removal of the threatening symptoms. The feelings of the individual will afford the best criterion for the degree of heat to be employed, provided that of 96° be not exceeded; above that point, the bath is hot rather than tepid, and instead of invigorating, has a contrary tendency. Ten minutes is quite sufficient for the first immersion, after which the time may be gradually increased; but the patient should never remain so long in the bath as to excite unpleasant sensations.

In Chlorosis, the warm bath is of great service in removing the languid state of the circulation, and consequently the obstruction of the natural evacuations, which constitute the leading symptoms of the complaint: in this disease it ought never to be used at a lower temperature than 80°.

When the Dinsdale bath is employed for the removal of affections of the skin, the individual should use it before going to bed; and when much freedom of perspiration is required, some warm diluting drink should be taken: when only a slight action of the skin is desired, the patient may bathe earlier, and go to bed at his usual hour. In affections of the surface, the temperature of the bath may be as high as 97°,

and should be kept at that point during the whole of the immersion; the temperature being determined by a thermometer, and not by the sensations of the individual.

The time of immersion in these cases may be continued longer than when it is employed as a remedy for the removal of internal disease: as a general rule, the invalid may remain in the bath from twenty minutes to half an hour.

It is of great service in all eruptions arising from a disordered state of the digestive organs, as blotched face, Pityriasis versicolor, &c. Also in Eczema, Lepra, and in the Itch, in every stage of the disease. In most cases of disease of the surface, diligent friction ought to be employed, with the flesh brush, during the time of immersion, but particularly in cases of Lepra.

The use of the warm bath affords great comfort and relief to the delicate and suffering part of the creation, during pregnancy; and is highly beneficial in the early periods of infancy, diminishing the danger of teething, and of various convulsive and cutaneous diseases.

The warm bath is a great solace in declining life. "The story of Æson becoming young, from the medicated baths of Medea, seems to have been intended to teach the efficacy of warm

bathing, in retarding the approach of old age. The words *relaxation* and *bracing*, which are generally thought expressive of the effects of warm or cold bathing, are mechanical terms properly applied to drums or strings; but are only metaphors, when applied to the effects of cold or warm bathing, on animal bodies. The immediate cause of old age seems to reside in the irritability of the finer parts or vessels of our system: hence, these cease to act, and collapse, or become horny, or bony; the warm bath is peculiarly adapted to prevent these circumstances by its increasing our irritability, and by moistening and softening the skin and the extremities of the finer vessels which terminate in it. To those who are past the meridian of life, and have dry skins, and begin to be emaciated, the warm bath for half an hour, twice a week, I believe to be eminently serviceable in retarding the advances of old age.”*

The fear of taking cold, after warm bathing, is founded in error; great care should be taken to rub the skin perfectly dry; after which, the usual clothing may be worn, and gentle exercise taken in the open air, unless the weather should

* Darwin's *Zoonomia*, page 686.

be particularly cold, or the individual feel chilly.

As many individuals wish to continue the use of the bath, upon leaving Croft and Dinsdale; I have been in the habit of recommending the following formula for the preparation of a sulphur bath; it was the medicated bath used by Bonaparte:—

Take, for every gallon of the water you wish to impregnate,

Two grains of alumine,

Two grains of carbonate of lime,

Two grains of hard Spanish soap,

Four grains of muriat of soda,

Twenty grains of dried carbonate of soda,
and

Sixteen grains of the sulphuret of potash.

Grind the materials together, and boil them in as much water as will dissolve them; stir them over the fire, till the sulphuretted hydrogen gas is disengaged, which is known by an odour resembling the smell of rotten eggs; then mix the ingredients with the water of the bath, previously prepared.

THE VAPOUR BATH.

It is a curious fact, that the vapour bath is more frequently employed, as a remedial agent, by the savage Indian, the ignorant Turk, and the barbarous Russian, than by the civilized and lettered European. It is hardly possible to take up a book of travels, without reading the author's observations on its efficacy; whilst, in many instances, the traveller attributes the preservation of his own life to its use.* And although on the continent, the vapour bath forms a regular part of the bathing apparatus, and is there held in high estimation; yet, until of late years, it was in a great measure unknown in England; and, unless upon some particular occasion or pressing emergency, ordered by the physician as a last resource, it was very rarely employed.

The vapour bath is simply a hot bath employed in the form of steam, which being a weaker

* "Throughout the vast empire of Russia, through Finland, Lapland, Sweden and Norway, there is no cottage so poor, no hut so destitute, but it possesses its vapour bath; in which all its inhabitants, every Saturday at least, and every day in cases of sickness, experience comfort and salubrity."—*Travels in various Countries of Europe, Asia, and Africa*, by E. D. Clarke. LL.D.

conductor of caloric than hot water, whilst its actual temperature is much higher; it affords the means of applying this stimulus to the body with greater intensity; and, by uniting the two agents, heat and moisture, it speedily causes a profuse perspiration. The immediate effect of the vapour bath is an increased activity in the blood vessels of the surface of the body; thus immediately relieving congestion in the large vessels, inflammation of the viscera, &c., and inducing a copious flow of perspiration.

The vapour bath has been found of great service in the cold stage of fever, in inflammations of the thoracic and abdominal viscera, in bilious complaints, in certain forms of rheumatism, in glandular swellings of the neck, in cutaneous diseases, in ascites or dropsy of the abdomen; in diabetes, and when used in catarrh, or in the commencement of a common cold, it rarely fails to give immediate relief.

In all cases, when it is our wish to keep up the action upon the skin, it will be prudent to use the vapour bath in the evening, and retire to bed immediately afterwards; assisting its operation by the use of warm diluent drinks. Should the bath be intended to restore the balance of the circulation, and renovate the system, it should

then be employed in the same manner as the warm bath for the same purpose, about the middle of the day, or at least two hours before dinner. The body must be well dried and rubbed with a coarse towel, after the use of the bath, and gentle exercise taken in the open air.

The perfect safety of this sudden transition from the heat of the vapour bath to the cool atmosphere, is clearly shewn in the practice pursued by the hardy Russian, who, reeking from the vapour bath, plunges into the cold bath, rolls in the snow, or exposes his person to the rigorous frost; and acquires, by these sudden transitions, a hardiness of constitution which enables him to brave and endure every severity of climate.

In Diabetes, and in Ascites, or dropsy of the abdomen, when unconnected with organic disease, the vapour bath produces the happiest effects, by inducing a healthy action of the skin, relieving internal congestion, stimulating the absorbent vessels to increased action, and thus very powerfully assisting the operation of medicine.

The efficacy of the vapour bath in Diabetes, has been noticed at page 51, when treating on that disease.

Some years ago, a gentleman came under my care, who had laboured under dropsy of the abdomen for some time. All the usual remedies had failed in producing any effect in the removal of his disease, and he was fast sinking under its power. He was so very weak, that the employment of any active remedy was, to say the least, a very hazardous experiment; and I was upon the point of proposing the operation of tapping the abdomen to him, when I recollected having seen a similar case yield to the frequent use of the vapour bath. We immediately commenced using the vapour bath daily, and, in a very short time, the mildest purgatives produced the most decided effect. My patient had provided himself with a long piece of tape, with which he daily measured his circumference; and, at each visit, pleasantly presented me with an inch of it, as a proof positive of his progress towards recovery. In ten weeks, from being a very tun of a man, he was restored to his usual figure; and, excepting that he looked rather pale in the face, and was weak from the long period of his sickness, he left me in good health. I have seen this gentleman once by accident since he left my care; but, until he gave me his card, I did not know him. He never had any return of his disease.

I have recommended the vapour bath in similar cases with great advantage, and when no organic disease of the viscera existed, invariably with success.

The temperature of the vapour bath may be from 110 to 130 degrees; and the time for continuing in it, from fifteen minutes to an hour, according to the circumstances of the case.

The sick poor are permitted the use of a Bath at Dinsdale, gratis, upon producing a certificate from the minister of their parish, or their medical attendant. I have memoranda of upwards of 400 poor individuals, who have either been cured, or considerably relieved, at the Spa, during the last ten years; and I shall always be happy to assist, with advice or medicine, such as apply to me.

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